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Fourdrinier type Machines for Newsprint, Book Paper, Bond Paper, Wrapping Paper

We also make

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OFFICE: MONTREAL, QUE.

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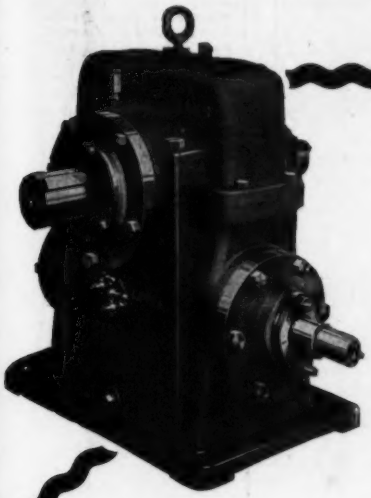
Entered as second class matter August 13, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ■ ESTABLISHED 1872 ■ FIFTY-SEVENTH YEAR ■ Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa. EXECUTIVE AND EDITORIAL OFFICES: 10 East 39th Street, NEW YORK CITY. CHICAGO, 123 West Madison Street, Chicago, Ill.



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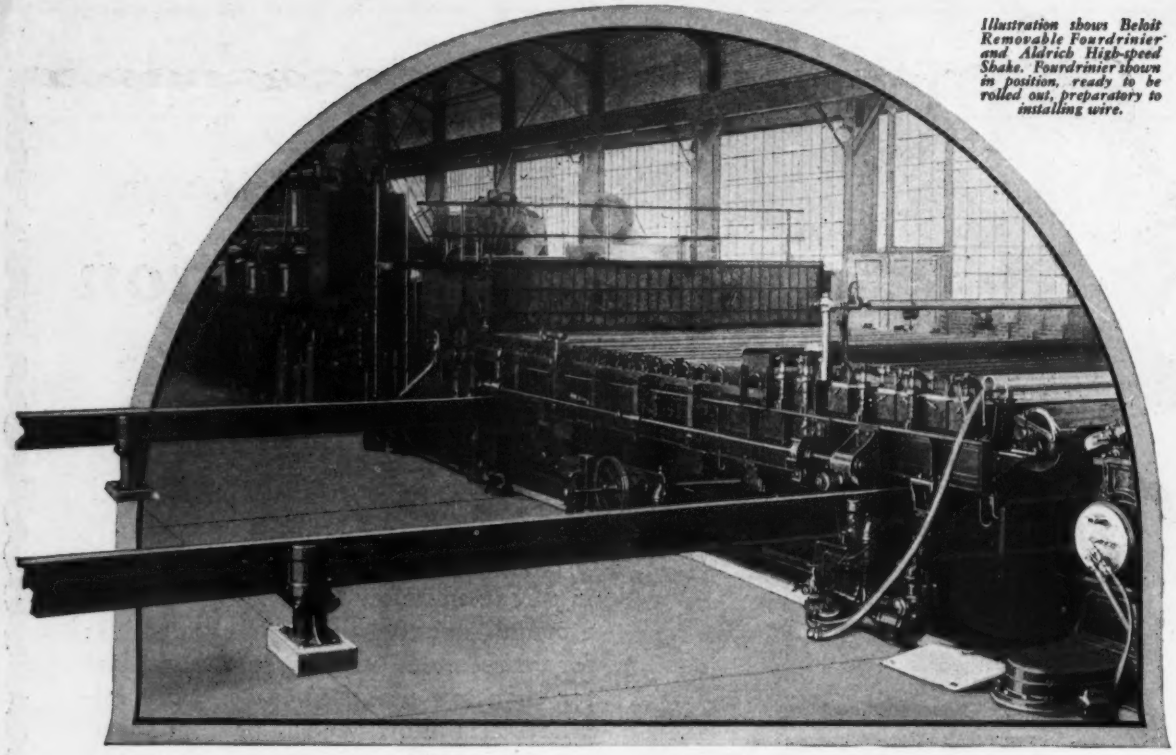

Illustration shows Beloit Removable Fourdrinier and Aldrich High-speed Shake. Fourdrinier shown in position, ready to be rolled out, preparatory to installing wire.

The REMOVABLE FOURDRINIER

Removes the Monkey-Wrench

WIRE changes used to play havoc in the machine room—it was like throwing a monkey-wrench into the machinery and then stopping the works to take it out.

What did it matter if the men toiled like oxen? What if a table or breast roll or bearing did drop with a bang? It was all in the day's work.

The Removable Fourdrinier has changed all this. All you do now is to slide out the Fourdrinier, install the new wire, roll the Fourdrinier back into place—and the job is done!

In an hour you can usually complete the entire task—smoothly, easily, efficiently.

The *Removable* Way is the *Modern* Way

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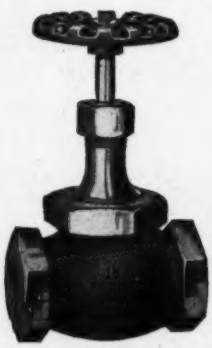
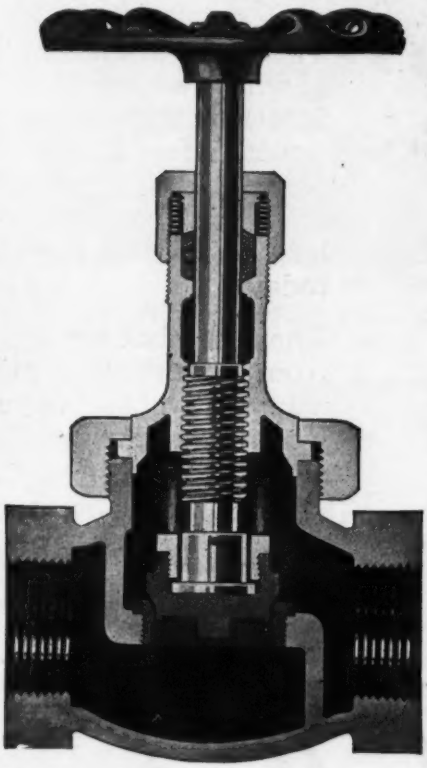
The BELOIT

Walworth FERRO Regrinding Valves



GLOBE



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FOR ALL KINDS OF HARD JOBS

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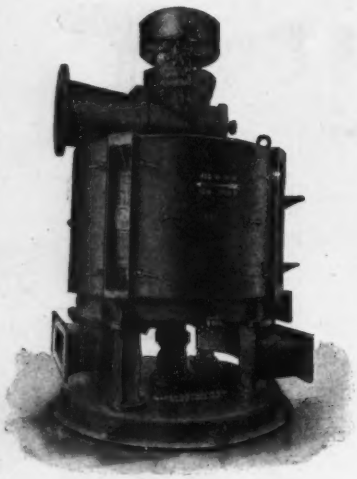
THE CENTRIFUGAL SCREEN



This illustration is of The Centrifugal Screen of which we are the sole manufacturers. This Screen is still the peer of all machines constructed for screening either sulphite, sulphate, soda or ground wood pulp. It does more work and better work with the use of less power than any other Screen being built today.

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Baker Manufacturing Corporation

Saratoga Springs, N. Y.

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"I have always noticed that the chap who believes in PLUCK, is the one who sits on the front seat and does the driving, while the one who places his faith in LUCK squirms around on the back seat and does the grumbling."

When we placed

KVP PAPERS

on the market luck did not enter into it. We felt there was a demand for them and we have proved it, hence as you have the pluck let's get together so that everybody may get the benefit.

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The new Morse Data Book contains valuable information on the design and application of power drives. Write for your copy.
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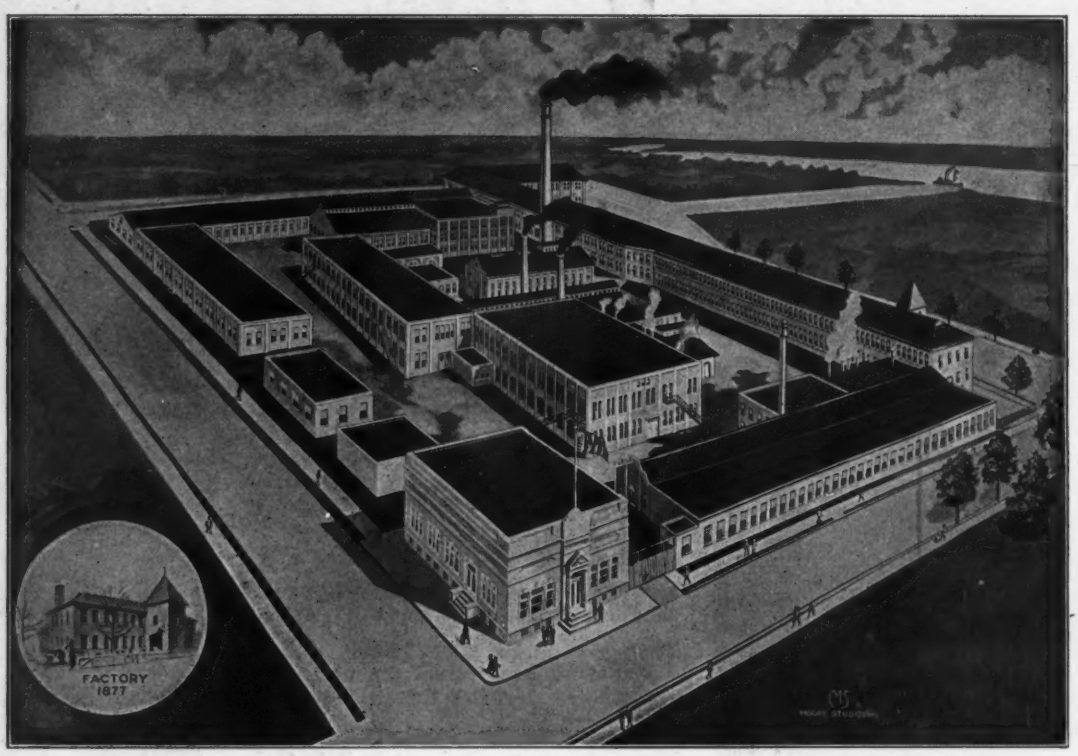

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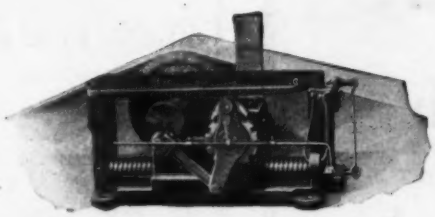
For Wet Felts or Dryer Felts

A very light, wooden Fender barely touches and follows the felt.

The Fender has a movement of five or six inches to accommodate the felt as to width or position on machine, and is adjustable.



Catalog No. 2 Upon Request

The Fender being always close to roll, does not turn the edge of felt.

The desired contact against felt is obtained by an adjustable counter balance weight.

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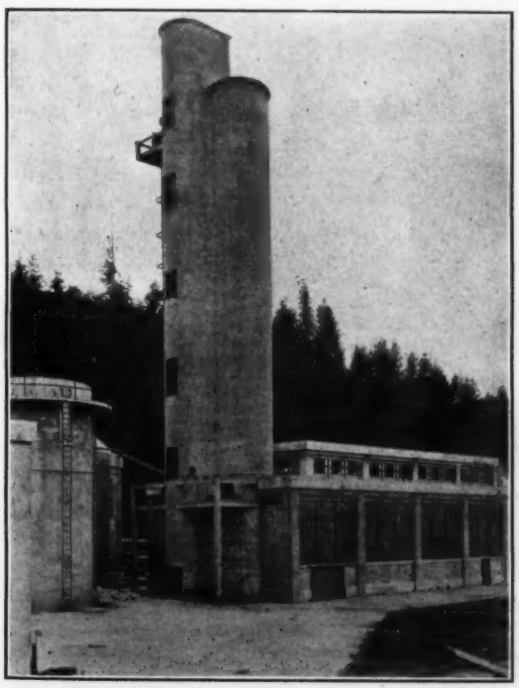

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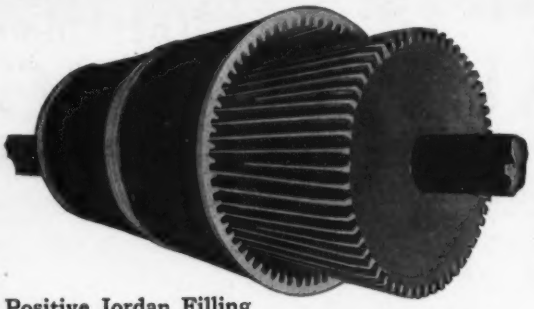

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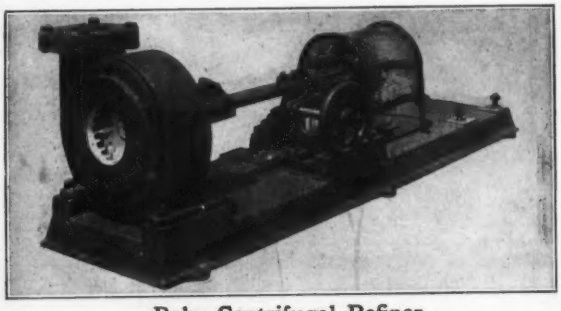
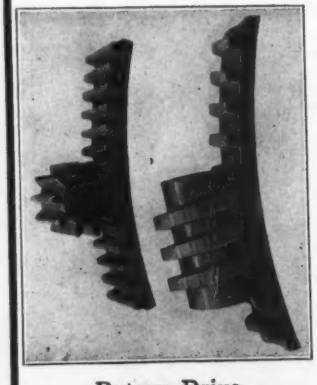
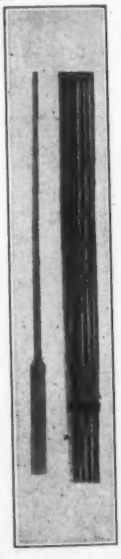


Bahr Centrifugal Refiner



Rotary Drive



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California-Oregon Paper Mills, Los Angeles, Cal.
Chase Bag Company at Buffalo, N. Y., Toledo, Ohio and Goshen, Ind.
Chillicothe Paper Co., Chillicothe, Ohio.
Cleveland-Akron Bag Co., Boston Mills, Ohio.
Columbia River Paper Mill Co, Portland, Ore.
Continental Paper Co., Bogota, N. J.
Federal Paper Board Co., Bogota, N. J.
Foster Box Board Co., Utica, N. Y.
Robert Gair Co., Piermont, N. Y.
Hammermill Paper Co., Erie, Pa.
Hinde & Dauch Paper Co., Sandusky, Ohio.
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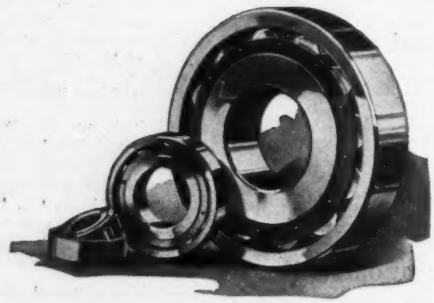

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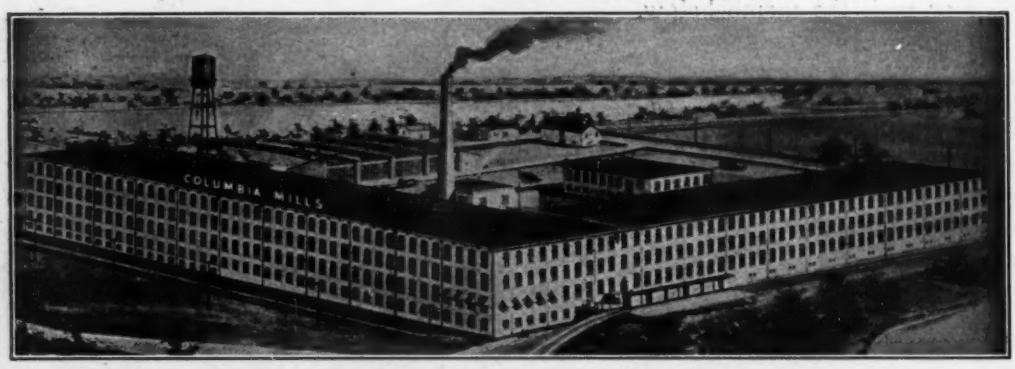
Widths 68" to 210"

Felts within above ranges made in lengths as required



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If your machines are always crowding your beaters for stuff, you may be losing 10% of your possible production.

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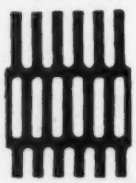

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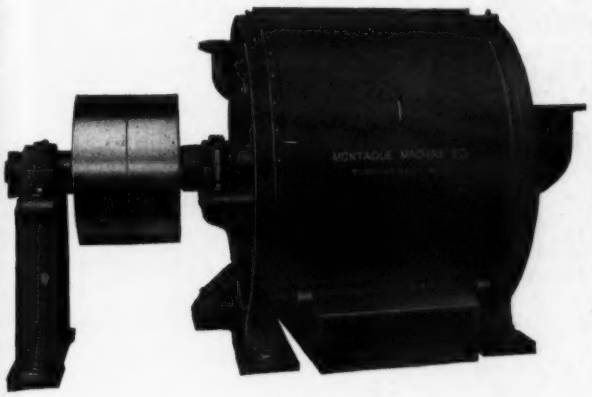
The Montague Screen

Patent applied for.



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Microscopical, Chemical and Physical Processes and Apparatus Employed

ILLUSTRATED

Prepared by the **Committee on Paper Testing**

of the Technical Association of the Pulp & Paper Industry

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IV. Chemical Analysis

1. Official Method for Quantitative Determination of Moisture in Paper
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3. Official Method for Analysis of Mineral Filler in Paper
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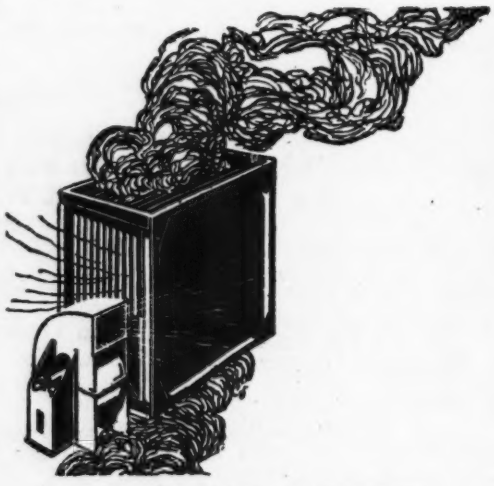

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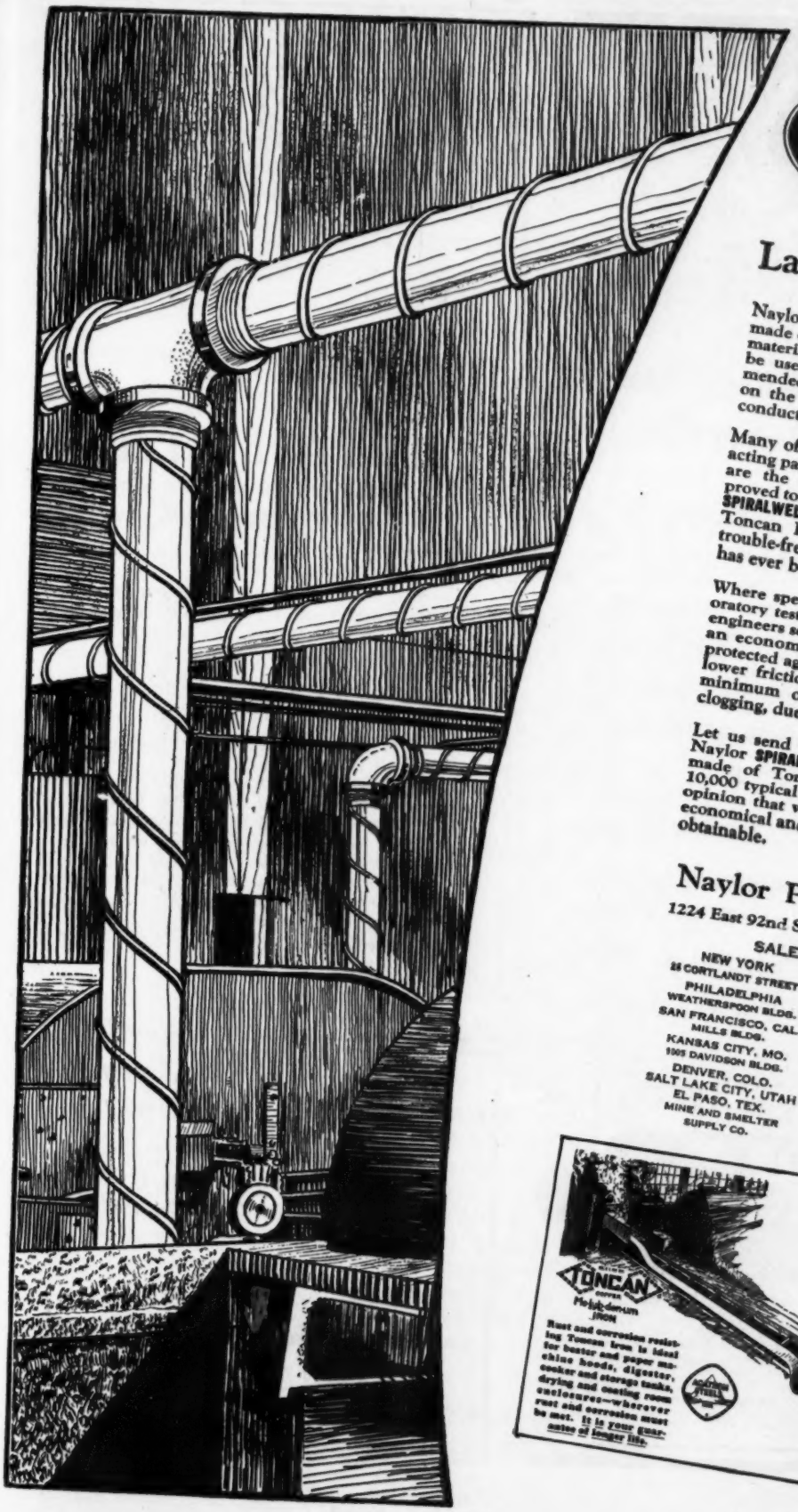

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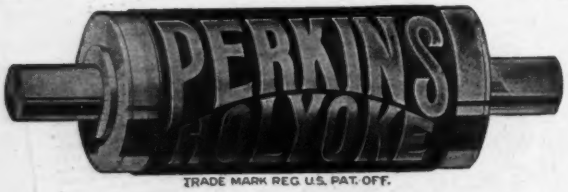

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CONTENTS

In this list of definitions has been included, as far as possible—

(a) The basic paper terms used in the classification (identified by the classification numbers).

(b) The various commercial papers, the names of which have, in most instances, grown out of special uses to which the papers have been put.

(c) Various converted articles made from paper.

(d) Standard sizes of papers.

(e) Special finishes of papers.

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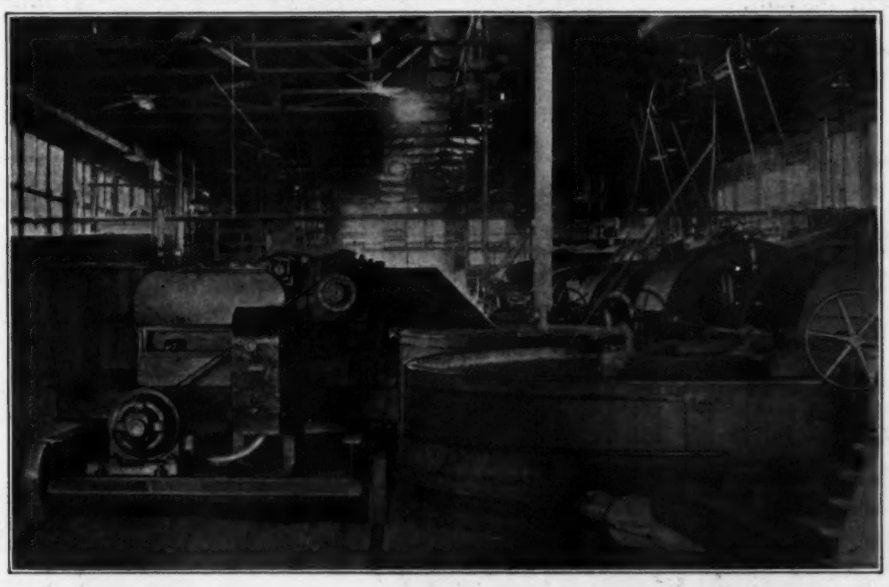
PORTABLE SHREDDER



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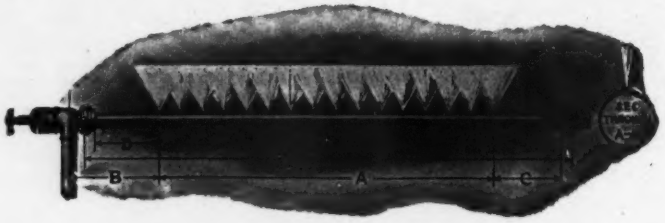

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1450 Paper Terms

Drawn up by the Sectional Committee on Definitions.

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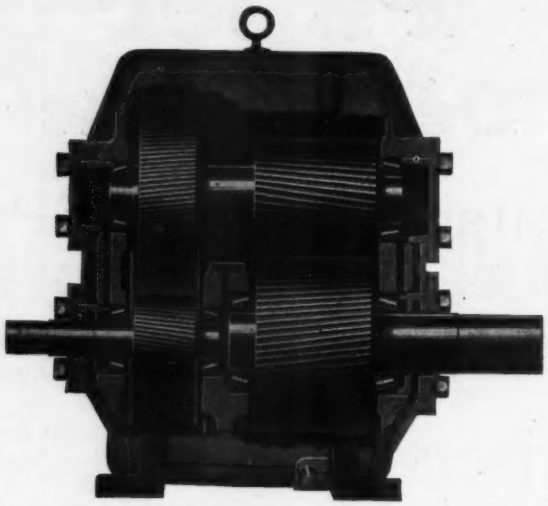

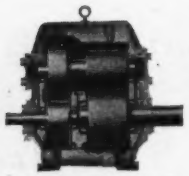

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FIFTY-SEVENTH YEAR

Published Every Thursday by the

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Vol. LXXXVII, No. 10 — Thursday, September 6, 1928

New Brunswick Not to Limit News Output

Premier J. B. M. Baxter Declares That His Province Intends to Go Ahead With Greatest Expansion of Its History and Will Not Enter Agreement With Other Canadian Provinces To Curtail Production—Similar Attitude By Nova Scotia Taken for Granted—

Other Developments Indicate Widespread Expansion of News Print Industry

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 3, 1928.—That New Brunswick will not be a party to the suggested limitation of the output of news print under the supervision of the Provincial governments of Canada is plainly demonstrated by a statement of the Hon. J. B. M. Baxter, premier of New Brunswick. Speaking at Chatham, N. B., a few days ago, Mr. Baxter said:

"At a time when the premiers of other provinces are meeting to devise means of curtailing pulp and paper production, New Brunswick is going ahead with the greatest industrial expansion in its history—for New Brunswick is running its own business and will not be kept out of the race.

"I can tell you to-day that within the next two or three years there will be operating a 250-ton paper mill at Dalhousie, the capacity of which will be increased to 500 tons within five years. There will be two sulphite mills on the Miramichi. The capacity of the Bathurst paper mill will be doubled by the installation of another paper machine and there will be erected at Athol, in the county of Restigouche, another sulphite mill. Within two months the power will be turned on at Great Falls, not to be used for purposes of illumination but for power to produce the richest form of wealth the forests of the province have yet produced."

"Stay here and work," advised the Premier, "work for the common good and the province will achieve its destiny."

It may be taken for granted that Nova Scotia's attitude will be the same as that of New Brunswick, for great hopes are centered upon the development of a news print industry there—a long-dreamt-of development which is now taking shape through the work now going ahead for the construction of a news print mill of 200 to 250 tons capacity at Liverpool, N. S., by the Killam interests of Montreal. This mill, according to present plans, will come into operation by December of next year.

Another development indication of the wide expansion of the industry is the news not officially confirmed, that the International Paper Company has commenced some preliminary work on the proposed new news print mill at the head of the Great Lakes. Work has been carried out at Nipigon, Port Arthur, and Fort William. The limits to supply the raw material for the new mill were acquired from interests associated with the St. Lawrence Paper Mills.

Program at Spruce Falls

Then there is another complication of immediate effect in adding to marketing difficulties. This is the rapid progress being made with the plant of the Spruce Falls Power and Paper Company at Kapuskasing by interests associated with the *New York Times*. The third paper machine at this plant has just been brought into operation, and the fourth will be ready within a few weeks. Each of the machines is 234 inches wide, and the total capacity of the mill by October will be 500 tons of news print per day.

Backus Brooks Development

Meanwhile the Backus Brooks news print plant at Port William is being enlarged. The Canadian Comstock Company, which made the machines for the Spruce Falls plant reports that the new 286-inch machine in the Backus Brooks plant in Fort William is ready for operation and that a 304-inch machine, the largest in the world, is to be erected for the same interests. It will be completed by December, 1928.

The New Zealand Market

During the past five years New Zealand has ranked next in importance to Australia and the United Kingdom as an overseas purchaser of Canadian news print, and the consistency with which it has absorbed from 200,000 to 300,000 cwt. of this Canadian product has stamped it as an outlet for exportable surpluses of substantial value to the industry.

Statistics prepared by the New Zealand Customs Department record a total import of news print paper during the years 1925, 1926, and 1927 amounting to 375,498 cwt., 445,848 cwt., and 454,946 cwt. respectively, the value of this trade having aggregated £367,737 in 1925, £415,714 in 1926, and £400,176 in 1927. That Canada has been outstanding among the few countries from which these supplies have been drawn is amply evidenced by the fact that during the same years (1925-27) Canadian news print paper constituted over 64 per cent of all imports, the remainder having originated chiefly in the United Kingdom, although a growing trade from Newfoundland has been one of the most interesting of recent market developments.

Paul Sykes, the assistant Canadian trade commissioner at Auckland, reports that "Some uncertainty regarding the price situation is at present felt throughout parts of the news print trade, a result both of indications of a drop in the prices quoted by English mills and of the somewhat disturbed conditions prevailing within the Canadian industry. Recent reports of price reductions in the United States market have also tended in this direction. The high quality maintained by Canadian mills, however, appears as one of the prime features in an estimate of future trends of the New Zealand market and should lead to favorable consideration of the tenders submitted by Canadian mills for next year's supplies and at least a maintenance of the volume of orders.

Philadelphia Mills Prepare for Fall Demand

Prices Show Stiffening Tendency and Outlook Generally For the Immediate Future Is Now Encouraging—National Waterproofing Co., With Offices in the Drexel Bldg. and Plant at Camden, N. J., Makes Mulch Paper—N. A. Considine Returns

[FROM OUR REGULAR CORRESPONDENT]

Philadelphia, Pa., September 4, 1928.—There are a few mills that now are ready to resume production on full time as the autumn orders show increased demand for many grades of fine papers and specialties among the coarse lines. Out of town mills are coming into the local markets with increased prices and prospects of broader movements on the upward side of values as the autumn approaches. Many lines of papers have been revised to the prices that were effective last spring after drastic reductions on a few grades throughout the earlier weeks of the summer season. Greater price changes will be effective when the season is under way and the local manufacturers are consoled with this change of front on the part of outside mills that have been keen competitors of the producers in this section. A few weeks ago the local paper manufacturers and converters were complaining of the keenness of outside mills in the competition for autumn orders that were secured at far more attractive prices by the prominent and larger mills campaigning here for fall business. Now that prices are showing a stiffening tendency this anxiety for the maintenance of operations on a profitable basis has disappeared and the producers are hopeful of brighter days with the coming months.

Fine Papers Drift As Printers Wait Summer's End

As printers are cautiously awaiting the close of the summer vacation days the fine papers dealers are drifting along awaiting the returning interest in the graphic arts trade. It is expected that with the passing of the Labor Day there will be more interest among the printers as industry takes on a new lease of activity and demand for printed matter necessarily follows revived business.

Seasonal Market For Coarse Grades

Continued interest in the seasonally active paper stocks in the coarse grades holds the attention of the wrapping paper and specialty dealers. There has been a slightly increased business in the standard wrapping papers consumed by the textile and other manufacturing industries. Builders supplies in the paper list are now more active as the season permits continued outdoor work. Prices of the builders supplies in roofings, felts, boards and sheathing papers are firm while distribution increases and demand continues to show an expansion for the general line. While the prices of building papers were reduced in the early season they now are firmly held at a slight advance but with no notable improvement that will adjust the current market to the same period of 1927 when values were considerably higher.

National Paper Box Association Reports Box Trade

A report on the activity of the paper box industry was issued during the late August by the local headquarters of the National Paper Box Manufacturers Association, in the Liberty Title and Trust Building, Broad and Arch streets. This report was sent to the membership and the Associated Division including the paper supply dealers who are enrolled in the organization. The nation's conditions with regard to the box industry as reported by the Association follows.

"Pacific Coast business has been slow for nearly a year. Minneapolis-St. Paul district has been below last year; Chicago about the same as last year; New York, slight increase; Philadelphia, same as last year; Baltimore, below last year; South, improvement over last year; Mid-West, improvement over 1927; St. Louis, aproximately the same as last year.

Business is spotty, sales depending largely upon the condition of the industry served. Candy box sales reflect the unsatisfactory condition of that industry. Hosiery box business has been generally good. Department store buyers have been slow in placing orders, and conservative on quantities. Indications are for good fall business. Members are cautioned not to fill up their plants with orders for fall delivery at prices based on competitive conditions influenced by mid-summer dullness. Members should take into consideration the seasonal nature of box business—60 per cent of the production is turned out in 40 per cent of the time. Box manufacturing is like farming, there is but one harvest. Unfortunately, neither of the political parties provided a plank in their platform for aiding the box manufacturer. He must look out for himself.

Board quotations are the same as reported in former bulletin. Price concessions have been noted, however, in certain territories."

National Waterproofing Co. Makes Mulch Papers

Mulch paper used for agricultural purposes now is being produced by the National Waterproofing Company with plant in Camden, N. J., and offices in the Drexel Building this city. These papers are now in extensive demand in this country and have the approval of the U. S. Department of Agriculture as an aid in promoting the growth of crops. The mulch papers are of kraft foundation saturated with asphaltum.

The National Waterproofing Company, of which Isaac Collins is head will produce the mulch papers along with its line of wrapping papers and other grease and moisture proof specialties. These are now being produced in carload lots for the trade.

Extension Of Philadelphia Paper Mfg. Co.

Extensive mechanical units now are being constructed in the plant of the Philadelphia Paper Manufacturing Company, Water and Wolfe streets, for the increase of the production of its specially patented shipping containers used by the oil, paint, and other liquid manufacturing concerns using cans in packing their products. These new units will take care of the added sizes in the line of mineralite fibre boxes which have been supplanting the former wooden boxes used for shipping tin can containers. The products made by the Philadelphia Paper Manufacturing Company are designed under patents controlled by the company. They are made of a processed and chemically treated and hardened fiber board of unusual strength and impervious to moisture. Constructed as set up boxes the mineralite containers are adapted to shipping cans of one gallon, five gallon, 10 gallons and upward to 15 gallons or more. With the new machinery the firm announces additions to its line in the production of duplex containers that are designed to carry more than one can in a single container through the construction of a partition dividing the compartments. These units will provide for the manufacture of a 1-gal. mineralite box and 6-1 gal. boxes; 2-5 gal. boxes and the newest size of 15 gal. boxes. The boxes are built square and are an economy in the cost of transportation because of lightness in weight and are space savers in shipping taking less room than wooden boxes. They are more durable boxes as they cannot easily be broken or splintered like a wooden container. The fibre boards are so treated and hardened that they resiliant and when dented rebound into original shape. Large producers of alcohol, paint liquids, oils and other liquid products, such as the Standard

Oil Companies now are using the mineralite boxes for shipping purpose and the executives of the Philadelphia Paper Manufacturing Company believe that it will not be long before the mineralite fibre boxes will entirely replace the wooden shipping containers just as fibre containers have replaced the old style packings of food products and other merchandise. The firm has been producing its line for the past couple of years and already has twice increased its factory capacity to meet the needs of the industries to which it caters and the trade requirements. The present capacity is five times that of its initial production. The firm is controlled by the former associates of the old Philadelphia Paper Manufacturing Company which owned the mills and container plant in the Manayunk paper making section now under control of the Container Corporation of America and one of the largest in the East. W. D. Bryson, who is assistant treasurer of the company is manager of the sales office located in the Atlantic Building.

Hinde & Dauche Staff In Sales Convention

The entire local staff of the Hinde & Dauche Paper Company have returned from Sandusky, Ohio, where they were entertained and coached in the sales plans that are to be effected with the coming season. Those from the Philadelphia branch who united with their brethern on the staffff of the Hinde & Dauche Paper Company, in various parts of the nation and numbering 166 as represented in the assembled group at the convention during the three days of the late month were District Manager C. H. Wendt, A. E. Jones, H. B. Jolinson, R. A. Frshmuth, T. J. McDonald, and A. B. Braun. Following the convention Mr. Braun was assigned to look after the offices of the company in the plant of the Standard Fibre Box Corporation, St. Louis, which was taken over by the Hinde & Dauche Company two months ago. This plant is one of the largest manufacturers of solid fibre and corrugated containers in that section. At the convention were representatives of the Thompson & Norris Company of Brooklyn, whose six plants were acquired by the Hinde & Dauche Company 3 months ago and of the Raffell Company, of Baltimore whose factory devoted to corrugated products was acquired at the same time. The sales representatives were participants in the daily sales talks, mill inspections and the many social and outing events which made up the entertainment program. The meetings were under the direction of President Sydney Frohman, who presided at all sessions.

Norbert A. Considine Returns From Europe

President Norbert A. Considine of the Paper House of Pennsylvania, who has been summering in Europe on a recuperating trip, following a severe illness from pneumonia last winter, returned to New York, last week docking from the S. S. Resolute, on Thursday. He will be at his desk here after Labor Day.

President E. Behrends of Hammermill Returns

President E. Behrends, head of the Hammermill Paper Com pany, of Erie, Pa., returned from a prolonged tour of Europe last Thursday, making the sea trip aboard the Reliance. He docked too late to attend the annual sales convention in the latter half of the week but sent his greetings to the distributors.

Pulp and Paper Mills in Alaska Proposed by Secretary

KETCHIKAN, Alaska, August 25, 1928.—Pledging a definite program looking toward the establishment of pulp and paper mills in Alaska, Secretary of Agriculture Jardine, accompanied by United States Commissioner Henry C. O'Malley, left for Seattle this morning aboard the United States fisheries ship Brant.

Jardine and O'Malley will arrive in Seattle Tuesday and will attend sessions of the international game and fish conference opening there Monday.

Berkshire Paper Co. Starts at Adams

[FROM OUR REGULAR CORRESPONDENT]

ADAMS, Mass., September 4, 1928.—The Berkshire Paper Company is a new concern formed for the purpose of manufacturing and producing and selling paper, consisting of the watermarks and brands and trade names of the former Berkshire Hills Paper Company. Under a decree of the Superior Court the receiver was authorized to sell and dispose of the good will and all the assets remaining in his hands to the Berkshire Paper Company, the new organization.

The new concern has been organized under the Massachusetts Laws, Henry L. Harrington of Adams, Mass., president; Earl H. Davenport of Adams, Mass., vice-president; Perley W. Aldrich of Adams, Mass., secretary and treasurer, all of whom were connected with the old concern.

They have taken over the plant formerly occupied by the Renfrew Manufacturing Company and known as Mill No. 6, located in Adams, Mass., where there is water power and equipment sufficient for their needs, and the new concern are now occupying the premises.

Under the transfer and sale this new company purchases all the rights to manufacture and sell all of the watermarked papers, with the exclusive use and right to manufacture all trade marks, brands, watermarks and trade names of the former Berkshire Hills Paper Company.

To Appeal News Print Definition

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 5, 1928.—The Assistant Attorney General in New York has been notified by Frank Dow, Acting Commissioner of Customs, to file an appeal with the United States Court of Customs Appeals in the Heffernan news print definition case recently decided by the United States Customs Court. The communication on this subject follows:

"I am in receipt of your letter in which you invite attention to the decision of the Customs Court of July 3, where it is held that certain paper part of which had been assessed with duty at the rate of ¼ of 1 cent per pound and 10 per cent ad valorem under paragraph 1301 of the tariff act of 1922, and the remainder at the rate of 30 per cent ad valorem under paragraph 1309, was entitled to admission free of duty as standard news print paper under paragraph 1672 of the said act.

"In accordance with your recommendation you are hereby requested to file, in the name of the Secretary of the Treasury, an application with the United States Court of Customs Appeals for a review of the said decision."

Standard Div. Installs New Machine

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 4, 1928.—Installation of the new board machine at the Standard division of the Sutherland Paper Company will be completed in four weeks, according to L. W. Sutherland, president. It will be a fine piece of equipment of its type and capable of turning out a large quantity of high grade board.

Since the consolidation of the Sutherland and Standard, the main offices have been located at the former plant in Lincoln avenue, while the mill operating and purchasing departments are in the former Standard offices.

B. C. Dickinson, former president of the Standard Paper Company, is now treasurer of the Sutherland Paper Company, succeeding Walter L. Otis. Four additions are announced to the Sutherland directorate. They are B. C. Dickinson, James H. Dewing, W. J. Lawrence, all of Kalamazoo, and Jerome Keane, of Detroit.

President Sutherland reports business is very active with his concern and production is maintained at a high standard.

Chicago Paper Trade Looks For Active Autumn

Local Distributors Generally Experienced Spasmodically Fair August—Consumption of News Print Rules Well Up to Average for Season—Prevailing Demand for Fine Papers Is Better Than Anticipated—Board Market Continues Steady

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 3, 1928.—With the first week of the so-called fall months just in the offing Chicago paper men are clearing the decks for some real selling efforts that will undoubtedly bring satisfactory results. The month of August has been spasmodically fair and not so good. The past week has been characterized by little buying but by more plans for future selling. The news print market is reported as somewhat over produced but the Chicago district has been consuming at a rate that corresponds to the average. The volume of business in Chicago, while seasonally quiet, has been up to what was expected.

Interest in book and cover papers may start a bit earlier this year than last according to present indications and reports. The market has been "only fair" during August but conditions point to stimulated interest within the next two or three weeks. Fine papers are said to have surprised some of the most optimistic with a "better than expected" stamp placed on August business up to date. Prices are low and the margin of profit reported uncomfortably slim in most lines but demand has been quite fair for the season.

The board market is very steady and can be said to have been not at all bad for this last of the summer months. Tissues are about the same as last week while the wrapping paper market holds up quite well with prospects good for fall. Lines benefitting by school openings will be among the first to move more swiftly.

N. A. Schoenbucher Released From Contract

The Chicago Paper Association held its regular bi-monthly meeting at the Bismarck Hotel, Chicago, Tuesday evening, August 28. A very satisfactory group was in attendance. One unusually important item of business was transacted in which the association announced with much regret that N. A. Schoenbucher, recently secured in an advisory secretarial capacity, has requested that, from an ethical standpoint, he be released from his contract with the Chicago Paper Association. The association has stated that though they regretted exceedingly that Mr. Schoenbucher felt as he did they could not help but see his position clearly and honor him for the stand he has taken.

Negotiations are already under way with a well known corporation whose business is the conducting of association work to handle the secretarial duties of the Chicago Paper Association and to conduct such research as may be necessary to put the wrapping paper business in Chicago on a higher plane. Although an announcement as to the name of the firm will be made later the corporation is already acting in that capacity for several of the best known national trade associations.

Members of the Association are looking forward with interest to a golf outing at the beautiful Medinah Country Club, an outing made possible by the friendly spirit of cooperation of Frank Peck, president of the Hanchett Paper Company who will be host to members at the beautiful new Masonic club.

The directors of the wrapping paper association have outlined a very interesting and progressive program for the ensuing year.

News of the Industry

The offices of the Flambeau Paper Company and the Marathon Paper Company, in charge of Jim Coy and Ray Russell respectively, have been considerably enlarged in the last week or two and the present layout is one of the most complete among the attractive group of sales offices maintained in this city. A doorway has been made through to an adjoining suite of two offices, one room to be used for a storeroom and the other for the offices of J. H. Cowhill, who will work with Mr. Russell in the interests of Tomahawk kraft sales. Mr. Cowhill was formerly located in New York, filling a sales capacity with Price and Pierce. He has had much experience in the sale of kraft paper and his presence will undoubtedly be immediately felt in the Chicago territory. A switchboard has already been installed in the suite of offices and as Mr. Coy expressed it "they are fixed up in big league style." All the improvements have been made in the same office and the address continues to be on the 11th floor of the Company Building, 111 West Washington street.

The J. W. Butler Paper Company has recently announced the resignation of H. J. McLaughlin from their sales force. Harold F. Ermeling will take charge of some of Mr. McLaughlin's accounts, according to reports from the Butler offices. Mr. McLaughlin has joined the sales force of the Messenger Paper Company. He had been with the J. W. Butler Paper Company for ten years.

The Paper Mills Company, 517 South Wells street, Chicago, has recently issued its catalog and price list of imported papers, Catalog Number 4. The items appearing in the list are imported by the Japan Paper Company, New York, and distributed by the Paper Mills Company, the list being entirely separate from the paper mill list of domestic prices. Grades of paper listed are appropriate for the printing of private editions, de luxe books, fine catalogues, pamphlets, broadsides and advertising matter of unusual quality. Fifteen pages, 7 x 10 in size, are given over to a description, price, discounts for quantities and prices in 100 sheets, one item, 100 sheets assorted, less than 100 sheets one item, less than 100 sheets assorted, less than 25 sheets one or assorted items and less than 10 sheets one or assorted items.

The Blunden-Lyon Company, 323 West Polk street, Chicago, has recently sent out to the trade an attractive 7 x 10 folder describing the excellent qualities of Monon Enamel, the folder being printed on Monon Enamel, basis 25 x 38 -80. The paper is adaptable to four color printing and an example of this process is given on the attractive cover. Its printing quality with respect to 120, 133 and 150 line single color half tone reproduction is also evident from the illustrations on the third page of the folder. Highlight half tones, asking more of printing surface, are used to further demonstrate the quality of the paper. Monon Enamel is one of the most popular of the "Blyco" Line.

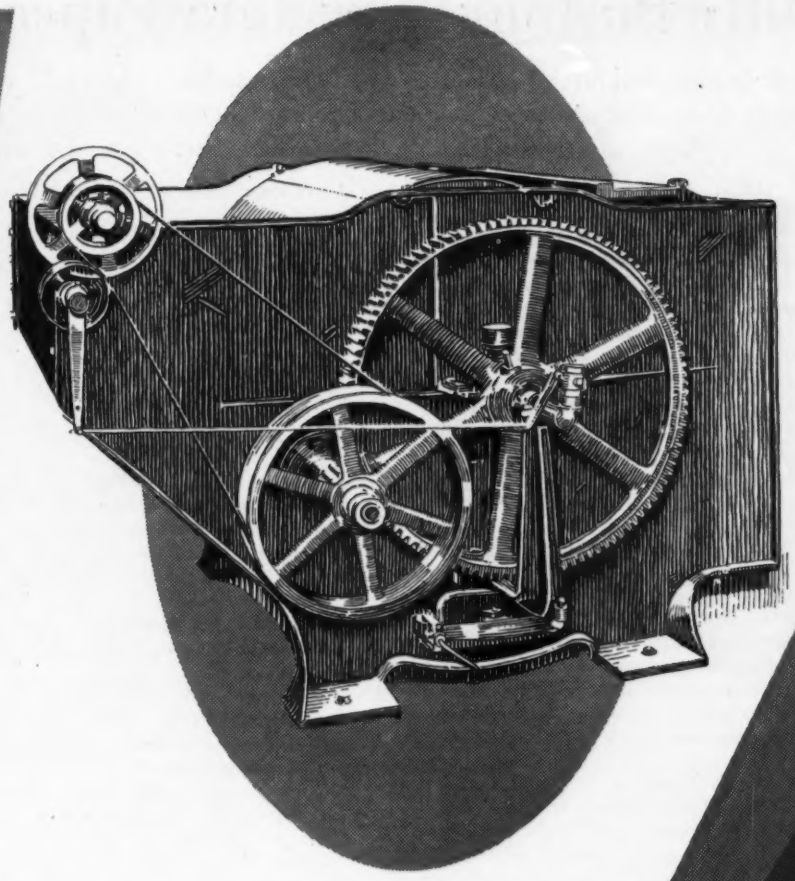
Complaints on Paper Rates

WASHINGTON, D. C., August 29, 1928.—A complaint has been filed with the Interstate Commerce Commission by the Carpenter Paper Company of Omaha, Nebr., against the Atchison, Topeka & Santa Fe Railway.

The company is asking the Commission to prescribe deasonable rate on book printing paper, printing paper, wrapping paper etc., from Cumminsville, Dayton, Franklin, Hamilton, Miamisburg, Middletown, and West Carrollton, Ohio to Omaha, Nebr., Sioux City, Iowa, Kansas City, Mo., Denver, Colo., Lincoln, Nebr., Wichita, Kans., and Oklahoma City, Okla. Reparation is asked.

The Commission has handed down a decision in the case of the York Haven Paper Company against the Pennsylvania Railroad Company. In their syllabus in this case the Commissioners say;

"Rates on crude sulphur, in carloads, from Baltimore, Md., to York Haven, Pa., found not unreasonable, or otherwise unlawful except that rate charged between October 12, 1925, and June 20, 1926, found unreasonable. Reparation awarded."



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BIRD MACHINE COMPANY
South Walpole, Massachusetts

The BIRD SAVE-ALL

BIRD MACHINERY

2234

Rod Mills Pushing Way Into Paper Industry

Survey by U. S. Forest Products Laboratory, of Madison, Wis., Shows 37 of These Plants Now In Operation—Used With Success as Part of Semi-Chemical Pulping Process and as Means of Refining Pulps, Screenings, Shives and Knots

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 3, 1928.—Rod mills are gradually pushing their way into the paper industry. A survey just completed by the United States Forest Products Laboratory of Madison, Wis., shows that there are thirty-seven of these in use today. This represents progress of a four year period, according to C. C. Heritage, chief of the laboratory's pulp and paper section, since the first mill, a small experimental one, was installed in 1924.

Ten of these mills are operated by six companies on kraft pulps alone, with machines ranging in size from four by eight feet nominal inside dimensions to seven by sixteen feet. Four companies report five rod mills running on sulphite pulp or screenings. Thirteen are used by five companies in the production of semi-chemical pulps, and one firm uses three to produce straw and chip boards.

"It is interesting to note," says Mr. Heritage, "that five small rod mills are being operated strictly for experimental purposes by commercial firms and laboratories in addition to the original one at the Forest Products Laboratory at Madison, Wis."

Two years of experimental work brought announcement from the laboratory in 1926 that the rod mill had been used with success as a part of the semi-chemical pulping process and as a means of refining pulps, shives, knots, and screenings. The idea was obtained from the machines used by the metallurgical trades for breaking up ores.

When in operation the rod mill is partly filled with loose, metallic rods two inches or more in diameter and somewhat shorter than its inside length. The laboratory had found that it could be used to reduce chips softened by mild chemical treatment and to obtain hydration with less reduction of fiber length through cutting and with less power consumption than usually is associated with beater hydration.

Prompted by recent reports of new installations of rod mills by the rod mill manufacturers, Mr. Heritage made a preliminary survey of such equipment in use in pulp mills on July 1 of this year, finding thirty-seven in all.

Controlling Stock Supply

An improved method of controlling stock supply has recently been devised and installed at the Biron mill of the Consolidated Power and Paper Company, of Wisconsin Rapids, Wis. This was accomplished through the ingenuity of W. E. Beadle, Jr., master mechanic, and Charles Procter.

An electrically operated device on the head box regulates and indicates in clear view the amount of stock being passed to the paper machine. Machine tenders thus are assisted materially in maintaining uniformly the basis weight of paper in process.

Push button switches conveniently situated at the front and back sides of the machine control the actuating device by which the valve is opened and closed, and a large dial indicator shows the amount of stock being consumed. Changes can be made quickly without having the machine tenders leave their posts.

Rosebush Heads Inland Empire

Judson G. Rosebush, paper manufacturer of Appleton, Wis., has been elected president of the Inland Empire Paper Company, of Millwood, Wash. He is president of the Patten Paper Company, Ltd., of Appleton, and the Northern Paper Mills, Green Bay, Wis. Mr. Rosebush announces that plans and specifications are being completed for a high speed paper machine which will be installed at the Inland mill, resulting in the doubling of production. Some time later a power plant will be built on the Spokane River near Millwood, but no definite action was taken at the annual meeting. The company has made the necessary surveys and has purchased the overflow rights.

New Interlake Digester Plant

All steel work is in place for the new digester plant of the Interlake Pulp and Paper Company of Appleton, Wis., a subsidiary of the Consolidated Water Power and Paper Company. Skeletons of the towers also are up, and the construction crews are ready to build up the walls with brick. A crew from the Biggs Boiler Company has arrived at the plant to place the shells for the nine big digesters on their steel cradles.

News of the Industry

Approximately 36,000 cords of pulp wood had been rafted across Lake Superior from Canada up to July 31 by the Consolidated Water Power and Paper Company. The company's tug *Butterfield* is bringing the wood to Ashland, Wis., where it is reloaded on cars for the company's various mills. The record for loading was 1,191 cords, or 53 cars, in one day by two shifts. The rafts average 10,000 to 12,000 cords, and are floated at a rate of about one mile an hour.

Work on the new boiler house of the Fox River Paper Company, of Appleton, Wis., is nearing completion. Four large boilers have been installed and these now are being connected to the water drums. Concrete fuel bins are being built also.

Three more Wisconsin paper mills will conduct training classes for foremen this fall, according to H. G. Noyes, state director of paper mill education. These are the Nekoosa-Edwards Paper Company, of Port Edwards, the Whiting-Plover Paper Company, of Stevens Point, and the Marathon Paper Mills, Company, of Rothschild. Afternoon and evening sessions will be arranged.

Damage amounting to several hundred dollars was caused recently at the Marinette and Menominee Paper Company's mill at Menominee, Mich. The blaze originated in the drying room and spread to the roof through ventilators. The fire did not disable the mill.

H. S. Furminger, retired superintendent of the Fox River Paper Company, Appleton, Wis., has sailed for Europe, where he will visit at England and on the continent for about six weeks. Mr. Furminger gave up his work recently, after devoting fifty years to paper manufacture.

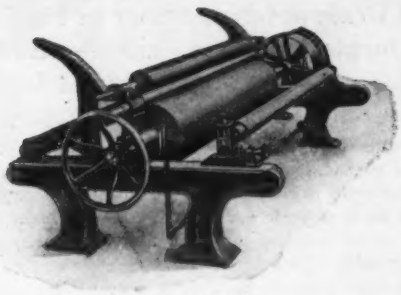
Announcement is made of the marriage of Harry F. Bins, assistant purchasing agent of the Hoberg Paper and Fiber Company, Green Bay, Wis., and Miss Alice C. Kotil. Another recent marriage was that of Roy J. Sund, of the sales force of the Wisconsin Products Company, of Menasha, and Miss Kathryn Pierce. The latter couple will reside in Chicago.

Rudolph Rapiach, an employee of the Kimberly-Clark Company's mill at Niagara, Wis., suffered the loss of three fingers in a recent accident. His hand became caught while he was trying to remove a piece of iron pipe that had become caught in the drum barker.

Attention TAPPI Members

Return post cards have been sent to all members of the Technical Association regarding the Fall Meeting at Wausau. These should be sent at once to Allen Abrams to assist the General Committee in arranging the program. Rooms at the Hotel Wausau are going fast and the best of them will be assigned to those making early reservation.

Cyclone (Fast) Beater



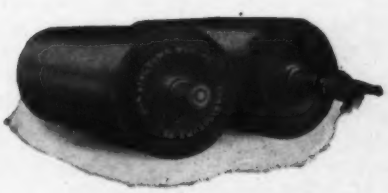
Tissue Winder

Compare Values

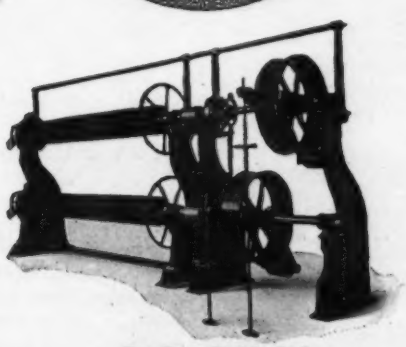
BEFORE you buy any new paper mill machinery, compare values as they are today. Compare designs and construction, for on these factors depend Efficiency, Durability and Freedom from Breakdowns. ¶ Don't forget, we make a complete line of equipment, including Fourdrinier or Cylinder Machines. ¶ Whatever you need, write us,—let us bid on your requirements. ¶ Bulletins on any products sent on request.

DOWNINGTOWN
Manufacturing Co.
Downingtown, Pa., U. S. A.

Cylinder Mould



Dryers



Two Drum Upright Reel

Boston Paper Trade In Satisfactory Condition

All Grades of Fine Paper in Particularly Good Request Due to Political Campaign Requirements and Other Causes—Kraft Paper in Excellent Position for Season of Year—Greater Demand for Box Board Anticipated in Near Future

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 3, 1928.—The average condition of the paper market, both in fine and kraft lines, is good for the season of the year, with the situation apparently improving somewhat from week to week. A concern which has been enjoying particularly active business continued to secure orders for fine paper in considerable volume in the last week in August. One of the dealers reports the best business ever in bonds, ledgers, and coated papers. A reason given by some for the activity in fine papers is the unusual amount of printing brought about by the political campaigns. Kraft is strong, with a certain amount of orders.

In box board the prices still remain unchanged, although an advance is expected on account of the rise in the value of paper stock, as previously noted in these columns. A greater demand for box board is looked for because of the probable need for boxes by the shoe manufacturers, who have been very busy.

A number of changes have taken place in the prices of old papers, bagging and rags, owing either to greater or less demand. No. 1 soft white shavings have advanced to 2.60, compared with a previous price of 2.45 to 2.55. A few of the mills have reduced their prices on No. 1 books heavy, which are now quoted at 1.50 to 1.55. There is a little more interest in white blank news, now quotable at 1.60 to 1.65, against a previous quotation of 1.50 to 1.60. A greater demand for old kraft has been in evidence, resulting in a quotation of 2.00 to 2.10 compared with a recent quotation of 1.90 to 2.00. Print manilas are .80 to .90, compared with a former range of .70 to .80. Some quote No. 1 mixed papers and old newspapers at the same range of prices, .65 to .70, although others are asking a flat price of .60 for mixed papers. A dealer notes that old newspapers are usually higher than mixed papers, and that there may be an advance in this commodity this week, because the demand will be greater than the supply. Among the sales of the week in old papers were a carload of kraft paper and a car load of kraft paper strings.

In some grades of bagging price levels have changed, more upward than downward. Scrap burlaps are quotable at 1.45 to 1.50, compared with a previous range of 1.50 to 1.60; scrap sisal at 1.25 to 1.50 compared with a flat 1.25; scrap sisal for shredding, at 1.50 to 1.65, compared with 1.50; new burlap cutting at 2.00 to 2.25, against 2.00. In new domestic rags, silesias No. 1 are a little lower, being quotable at .06 to .06½, compared with .07.

In the twine market both Manila and New Zealand rope and twine show a slight reduction in some grades and sizes. Jute twines are firm, but cotton twines are a little unsteady. The purchase of the Allentown Spinning Company, Allentown, Penn., by the Ludlow Manufacturing Associates, Ludlow, Mass., has had no immediate effect on the twine trade, but the ultimate result is expected to be favorable. This purchase is said to be the forerunner of further changes and consolidations.

New Carter Rice Officers

At a recent meeting of stockholders and directors of Carter Rice & Co. Corporation, George H. Lowe was elected to fill a new position as "chairman of the board." At this meeting officers were elected as follows: President, Hubert L. Carter; vice-president, Winthrop L. Carter; treasurer, J. C. Kennedy, who continues also as credit manager; secretary, Leslie W. Angell; acting general manager, Elwood Horton. Charles A. Young, who was manager of the white paper department, has recently resigned.

News of the Trade

Carter Rice & Co., Corporation is sending out to printers a folder of Lawton Bristol, the second one in a campaign of Bristol Board. The folder contains a specimen of dye-stamping and printing on antique finish and of printing on a plate finish. What the company thinks is a novel method has been adopted in placing the specimens on the inside of the front and back covers, so that the corners project about half an inch through slits in the covers. On the front cover the corners are somewhat camouflaged by use of a futuristic design in two colors with Ben-day treatment. Lawton Bristol is adaptable for menus, business cards, announcements, style cards, folders, greeting cards, invitations and many other uses. The previous folder advertised Index Bristols, Printing Bristols in both Plate and Antique Finish and Blanks. Each folder is accompanied by a bookmark of Lion Folding Bristol in color, containing a calendar of the month in which it is issued.

Carter Rice & Co. Corporation is making a special drive in cleaning out certain lines of goods which they are offering at 10 and 25 per cent reduction from catalog prices. These lines have been discontinued in an effort to standardize and prevent overlapping similar lines of merchandise.

A. C. Hall, treasurer of John Carter & Co., Inc., is passing his vacation with his family at Connecticut Lakes, Northern New Hampshire.

Herbert Ham, of A. E. Ham & Sons, leaves Thursday, September 6, to attend a convention of the Theta Delta Chi fraternity at Montreal. Mr. Ham is a graduate member of the chapter of the fraternity at Massachusetts Institute of Technology.

Horace B. Sargent, vice-president of E. Butterworth & Co., Inc., expects to return from his vacation this week.

Harry H. Rutter, treasurer of Rutter & McNaught, Inc., is at Sandwich, Cape Cod, Mass., for the holiday week-end.

M. Gottesman & Co. in New Quarters in Sweden

M. Gottesman & Co., Inc., who have for a great many years had their own offices in Stockholm, Sweden, announce that on or about October 1, 1928, their Stockholm offices will remove to improved quarters in the new building recently erected at Gustaf Adolfatorg 14, Stockholm.

Messrs. M. Gottesman & Co., Inc. have been established for over forty years and have at all times specialized in the importation of wood pulp from the Scandinavian countries, maintaining their Stockholm office for the better services they are thus able to render their numerous European connections.

The head offices of the company are in the Central National Bank Building, Broadway at 40th street, New York City.

D. Samuel Gottesman, president of the Company, is also Chairman of the Board of the Central National Bank of the City of New York and is president of the Central National Corporation, investment bankers and dealers in securities at the same address.

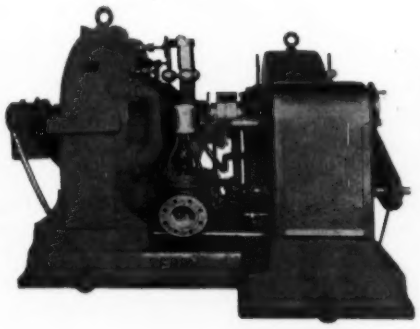
Cost and Technical Men Meet at Kalamazoo

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 5, 1928.—E. C. Rutz, superintendent of power and maintenance at the Bryant Paper Company, and Harry C. Bradford, secretary of the Rex Paper Company, were the speakers at the Wednesday evening session of the Cost and Technical Association of the paper industry, Kalamazoo Valley division. The former discussed the "Value of Systematic Maintenance," the latter offered a simple budget and standard cost system. Both papers were instructive. The program followed dinner, served at the club.

The TERRY Paper Machine Drive

[Variable or Constant Speed]



Company, Algona, Mich., where the turbine, a 250-horsepower unit, is equipped with a variable speed governor with a 6 to 1 speed range.

At the latter mill, the turbine operates on 115-pound initial steam pressure and exhausts against 5-pound back pressure. The simplicity and compactness of the unit, incidentally, enabled the Fletcher people to reduce their operating force by three men and to secure considerably greater production, by being able to drive the machine at higher speed than with the supplanted drive. That the installation paid is further evidenced by the fact that after a six months try-out of this initial turbine drive, a second such drive was ordered and is being installed at the present time.

At the Tumwater Paper Mills, Tumwater, Wash., one of the newer mills reputed to be thoroughly up-to-date, two non-condensing steam turbines of 200-horsepower capacity are in service, one driving the constant speed shaft and the other the variable speed member. The speed range is 4 to 1. Still another of these non-condensing turbine paper machine drives among the newer mills is that at the Southern International Paper Company, Camden, Ark. This is of particular interest, as when the mill is completed it will be one of the largest kraft mills in the country. Here, two 350-horsepower drive sets are installed, designed for 180-pound initial steam pressure, 40 degrees superheat and 20-pound back pressure, speed range 6 to 1

Paper Trade Journal 3-22-28

Again Proves Its Worth

—At the three more paper mills—the Fletcher Paper Company, the Southern International Paper Company and the Tumwater Paper Mills.

At the former, to quote the above clipping, "The simplicity and compactness of the unit, incidentally, enabled the Fletcher people to reduce their operating force by three men and to secure considerably greater production by being able to drive the machine at a higher speed than with the supplanted drive. That the installation paid is further evidenced by the fact that after a six months try-out of this initial turbine drive, a second drive was ordered and is being installed at the present time."

Information on the Terry Paper Machine Drive will gladly be sent on request.

The Terry Steam Turbine Company

TERRY SQUARE, HARTFORD, CT.
OFFICES IN PRINCIPAL CITIES
Steam Turbines + Gears + Shaft Couplings

T-1021

Canadian Exhibition Has Fine Paper Displays

Dominion Manufacturers and Wholesale Paper Houses Well Represented at Big National Fair Held in Toronto—Unusual Exhibit of Ontario Department of Lands and Forests Is Attracting Thousands of Visitors to Government Building

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 3, 1928.—The Department of Lands and Forests for Ontario have an unusually fine exhibit this year in the Ontario Government building of the Canadian National Exhibition and thousands of people are visiting it daily during the two weeks of the big fair. Living and working conditions in New Ontario northlands and the vast areas of timber, are illustrated in elaborately constructed scenes, while the work being carried on by the Department in the way of reforestation is being demonstrated. A large section of the exhibit is given over to a demonstration of what the Department is doing in the way of precautions against the fire hazard and what has actually been accomplished in fighting the destruction of timber by land, water and air forces in the employ of the Government.

Canadian paper manufacturing and wholesale paper houses and printing establishments are well represented at the Canadian National Exhibition in Toronto this year. The Interlake Tissue Mills, for instance, has an elaborately decorated booth in the Manufacturers' Building, showing the many uses to which fancy tissues can be devoted for decorative purposes, while the Dennison Manufacturing Company, Toronto, also has a fine showing of tissues, toilets, and other light weight papers. In the Industrial Building, the C. V. Syrett Paper Company, Ltd., have a display of coarse papers, including kraft and various grades of wrapping, fibers, fancy tissue papers, drinking cups, pie plates, egg carriers, etc., while in the Manufacturers' Building there is an effective display of Colonial Kid Finish and Old Tapestry Vellum in the Holland Linen line put out by the W. J. Gage Co., Ltd., Toronto.

Timber Limits Sold By Government

The Hon. William Finlayson, Minister of Lands and Forests for Ontario, announced this week that the Pourpore Lumber Company, Gogama, had been the highest and successful tenderer for the right to cut red and white pine and jack pine in the Townships of Chester and Neville District of Sudbury. The sale price of the red and white pine is $10 per 1,000 feet, and of the jack pine $6.50 per 1,000 feet. The total quantity in the two townships is 5,500,000 feet red and white, and 16,000,000 feet jack pine. The Pourpore Company has operated a large mill for a number of years. Their raw material supply became practically exhausted, and, in order to afford them an opportunity of continuing their industry, which includes pulpwood operations, the timber in question was put up for sale. They also produce ties in large quantities, their contracts being with the Canadian National Railways. After cutting the timber the company floats it to the mill where the ties are manufactured. The business is operated on an investment of $300,000 and its saw mill has a producing capacity of 75,000 to 100,000 feet per day. Between $400,000 and $500,000 has been paid to the Crown in dues during the past ten years.

To Reorganize Dryden Co. Later On

One of the reasons why the Dryden Paper Company, Dryden, Ont., has not yet been taken out of the hands of the receivers is because there are taxation advantages as long as the company is in receivership, and the management is said to be taking advantage of this situation. Probably, though, another reason why Dryden Paper languishes in the hands of the receiver lies in the prevailing market conditions, which preclude a reorganization on a basis satisfactory to the company and its shareholders. It is thought the management early in the year formulated some plans leading to the lifting of the receivership, but that the big market recession interfered with these plans. Probably, Dryden will be taken out of the hands of the receiver as soon as market conditions improve, for operating profits of the company are understood to be substantial.

Paper Superintendent Dies from Burns

Napier Wilde, mechanical superintendent of the Dryden paper mill at Dryden, Ont., died a few days ago from caustic soda burns suffered a few days before, when he slipped and was splashed by a strong solution. He was a son of Dr. and Mrs. Wilde, who reside in Montreal.

Abitibi Man Moves to Toronto

Alec Dewar, who for some years has been editing the *Broke Hustler,* the house organ of the Abitibi Power and Paper Company, published at Iroquois Falls, Ont., has arrived in Toronto and will be on the staff of the company's branch executive office in the Northern Ontario Building. In addition to his newspaper duties, Mr. Dewar had charge of publicity and was active in Farmers' Organizations, Northern Ontario Development, Employees' Committees, Technical Education, Recreation Committee, the Promotion of Juvenile Athletics, and Safety Work. The Abitibi Golf Club, the Abitibi Curling Club, the Associated Boards of Trade, and other local organizations, will lose a staunch member in his departure from the Falls.

Notes and Jottings of the Trade

The Hon. William Finlayson, Ontario Minister of Lands and Forests, has just returned from an aeroplane inspection of the northern part of the province, in one of the forestry patrol planes piloted by Captain Roy Maxwell, director of the service. The Minister covered 3,000 miles in four days and visited Albany, Rupert House, Orient Bay, Sioux Lookout, Red Lake, Woman Lake and Moose Factory. It is the most complete and comprehensive trip of this nature that any Minister of the Provincial Government has ever undertaken. Mr. Finlayson was primarily interested in the fire hazard which is more menacing this year than usual, owing to the exceptionally dry summer in the district of Patrecia, and the rush of prospectors to the northwest of the province, near the Manitoba boundary.

The Ontario Pulp and Paper Makers' Safety Association, of which A. P. Costigane, Toronto, is secretary-engineer, is now having its 1929 calendars printed. As usual they are well illustrated along safety lines, and in addition there are two extra pages containing a synopsis of First Aid Information in both English and French. The illustrations are cleverly drawn and are reproduced in color.

Lucien Guibord, of the Federal Paper Company, Ltd., Montreal, was a recent business visitor in Toronto.

R. B. Hall, of the Howard Smith Paper Mills, Toronto, was in Montreal last week on business.

Norman Wilkinson, of the Wilkinson Paper Company, Ltd., Melinda street, Toronto, has returned from a combined business and pleasure trip to Quebec.

A. Huntley, of the Montreal office of the Hodge-Sherriff Paper Company, Ltd., selling agents for Wayagamack Kraft, has arrived at the Toronto office of the company where he will spend a week before taking his vacation.

The Toronto Typothetae has inaugurated a canvass of the printing, paper, and allied trades in Toronto with a view to ascertaining to what extent these industries will contribute towards the $2,000,000 research foundation being established by the Ontario Government. It is expected that both the printing and paper

(*Continued on page 78*)

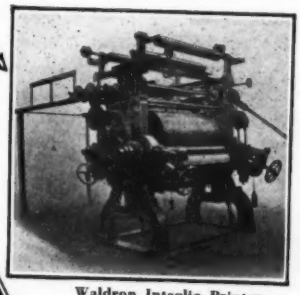
for everything~

From Paper Napkins to Wallboard

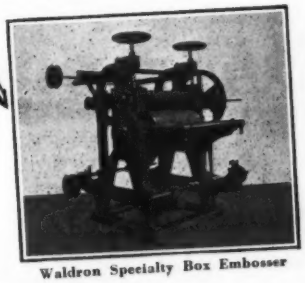
WALDRON Machinery

for PAPER CONVERTING

Waldron 6-Color Surface Printer



Waldron Intaglio Printer



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Waldron Festooning Equipment

In every great advance in the field of Paper Converting during the past century—Waldron has participated. Most of the new processing methods have been made possible by Waldron designed machinery. Keen minds of the Paper Converting industry have never lost sight of the fact that this specialized Waldron experience and machine building ability is their best assurance of correct design, lasting quality and economical operation of their machinery. Their insistence on having this assurance maintains the dominant Waldron position of leadership in this field.

Coating Machines	Paper Rolls
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Intaglio Printers	Gumming Machines
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TODAY with the tremendous new opportunities for greatly increased business from paper converting—the assistance of the Waldron Engineering Department is more valuable than ever. Make use of it. Consult us regarding your plans or problems. There's no obligation.

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New York Trade Jottings

The Industrial Paper Corporation, New York, has been chartered in the State of Delaware, with a capital stock of $300,000.

* * *

The Minsky Trading Company, dealers in cotton cuttings, etc., have opened offices at 27 Cleveland Place, New York. Telephone Canal 0355.

* * *

C. H. Chapman, formerly sales engineer of the Paper Mills Supply Company, Kalamazoo, Mich., is now with Price & Pierce, New York.

* * *

Gustav F. Enderlein, chief chemist of the Mosinee Paper Mills, Mosinee, Wis., arrived in New York last Saturday aboard the *Gripsholm* from Sweden.

* * *

The Long Island Paper and Twine Company, Babylon, L. I., has been incorporated under the laws of the State of New York, with a capital stock of 50 shares of common.

* * *

The New York Division of the Salesmen's Association of the Paper Industry will resume its weekly luncheons and meetings next Monday, September 10, at the Canadian Club, Belmont Hotel.

* * *

H. C. Stuart, Assistant Collector of the Port, has returned to duty in the Custom House after a vacation of several weeks spent in Connecticut. H. G. Andrews, solicitor in Collector Elting's office, substituted for Mr. Stuart during his absence.

* * *

The Commissioner of Customs has decided that jute shoddy hereafter shall be classified as waste not specially provided for and dutiable under the Tariff Act of 1922 at the rate of 10 per cent *ad valorem*. Previously the commodity had been classified as used chiefly for papermaking, but the Bureau has been advised that it has other and more important uses and has directed the change in classification.

* * *

The Society of Chemical Industry is holding its annual convention this week at the Chemists Club, New York. On Tuesday, the society elected as its president, Dr. Arthur D. Little, head of A. R. Little, Inc., Cambridge, Mass. He is the fourth American president the society has elected in its 47 years of existence. Although the organization is international, it is very largely composed of British and American members. Dr. Little succeeds Francis H. Carr, who was president for two years.

Harrisville Paper Co. to Expand

[FROM OUR REGULAR CORRESPONDENT]

HARRISVILLE, N. Y., September 4, 1928.—Operations at the plant of the Harrisville Paper Company, a subsidiary of the St. Regis Paper Company, will be extended in the near future and the number of employees increased. his was made known when officials of the St. Regis Paper Company announced this week that the Black River mill of the St. Regis Company has been closed for an indefinite period and that the type of paper formerly manufactured there will hereafter be produced at Harrisville. Many of the employees of the Black River mill will be transferred to the Harrisville plant which officials of the company say is more modern and much better equipped to produce the type of paper which has been made at Black River.

The future of the Black River mill, now closed, is uncertain. This mill has been in operation for thirty years and since 1916 has been controlled by the St. Regis Paper Co.

Paper House Celebrates Quarter Century

ST. PAUL, Minn., September 4, 1928.—The F. G. Leslie Paper Company, of this city, is celebrating its 25th anniversary this month. Frederick G. Leslie, founder of the present F. G. Leslie Paper Company, came to St. Paul in the year 1890, where he attended the N. S. Beardsley Business College, located in the Pioneer Building, after which he obtained employment with Wright, Barrett & Stilwell as office boy. Having served his apprenticeship he secured employment with the Minneapolis Paper Company, and later in 1895, joined the sales organization of the John Leslie Paper Company, who at that time operated a St. Paul branch, and which in due course was taken over by F. G. Leslie, who had been very instrumental in the development of this branch.

Shortly after the purchase of this business from the John Leslie Paper Company, H. L. Donahower became a partner in this business, at which time it was incorporated, the trade name later changing to the Leslie-Donahower Paper Company. The development of this business up to this time was such that they required considerable more space and found it necessary to obtain larger quarters in the Skidmore Block, located on Fifth and Minnesota streets. Here a most unusual misfortune occurred, the floors having collapsed, causing a considerable loss and a great inconvenience. However, due to the courage and industry of Mr. Leslie and his associates at that time, business was re-established without intermission at quarters in the Taylor Building on East third street, opposite the old Union Depot.

The extraordinary growth of the business here was due primarily to the foresight of Mr. Leslie and aggressive members of the sales organization, which again necessitated much larger quarters and in a brief space of time the business was moved to Fourth and Wacouta streets, where it carried on successfully until December, 1914, when the building and its contents was partially destroyed by fire. Temporary quarters were established on Third and Wabasha streets until the present building was erected at Wacouta and Ninth streets, which is one of the most modern (in every particular) paper warehouses in the country, and stands six stories high and has 65,000 square feet of floor space, entirely used in the conduct of the then Leslie-Donahower Paper Company.

Mr. Leslie, in the year 1921, purchased the interest of H. L. Donahower, and the trade name again reverted to the F. G. Leslie Paper Company. Lewis N. Sickels at this time became interested in the business, and was made secretary and treasurer, until March 1, 1927, when he retired to look after other interests, although remaining a preferred stock-holder. Mr. Leslie has been identified with most every club and organization operating for the benefit and development of the city and Northwest, taking special interest and part in the promotion of the building of the Auditorium, Y. M. C. A., St. Paul Hotel and the Athletic Club, the latter of which he was a charter member and has held office in this club since its conception, holding the unusual honor of life membership Number 1. Mr. Leslie has been known to be a large contributor to every St. Paul enterprise, and for a number of years has been trustee of the Minnesota Mutual Life Insurance Company.

Albert A. Wold, vice-president, has been identified with the paper business during all of his business career.

"Save the Forest" Posters

Attractively designed lithographed posters and signs drawing attention to the vital necessity of forest preservation from fire are being extensively used by State Forest Services and paper mills throughout the country. The paper used for these posters and signs is made of tough waterproof sulphite fiber. The National Printing and Engraving Company are responsible for the work and are represented locally by Arthur Bossie, of 1674 Broadway New York.

NEWPORT and ACME

"Steam Distilled Wood Turpentine"
Steam Distilled Pine Oils
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All Pure Pine Products

That are sold the world over on a bonafide guarantee as to purity and chemical uniformity.

General Naval Stores Company

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New York, Cincinnati, Chicago, New Orleans, Philadelphia, Minneapolis

The oldest and largest organization in the world exclusively engaged in selling "Steam Distilled Wood Turpentines", Pine Oil and Wood Rosin.

Here also is a group of representatives ready to supply your requirements for NEWPORT and ACME Turpentines, Pine Oils and Rosins in Tank Car, Carload or L. C. L. quantities.

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Buffalo, New York

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P. O. Box 99
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Mailliard & Schmiedell,
Board of Trade Bldg.,
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Mr. August Hoffmann,
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Lewis & Culp,
1407 West Jefferson St.,
Louisville, Kentucky

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Please remember NEWPORT and ACME REGULAR brands WOOD ROSIN are being largely used in PAPER MANUFACTURE.

Power Plant Section

Reducing Power Costs Through Unit Treatment

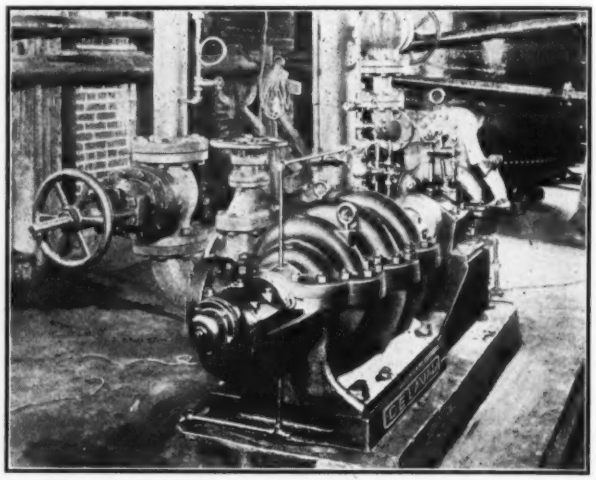
Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

Modernizing the Mill and Power Plant

Pump Installations

Each ton of paper produced entails the handling of several hundred tons of water. At several efficiently conducted mills, the measure is 700 gallons of fresh water for each pound of paper produced, and other liquids and semi-solids are pumped in like proportions. If the power plant is run condensingly, about a ton of water will be required for condensing purposes for each kilowatt-hour of energy generated. To produce the 3,000,000 or more horsepower consumed by the pulp and paper mills in the United States alone, something like 25,000,000,000 kilowatt-hours annually in electrical units, necessitates supplying the boilers of these industries with several hundred million tons of water during the year, whether the power plant is run condensingly or non-condensingly. Furthermore, the water employed in the actual operations of paper making, and in pulp production as well, has to be handled several times. This gives some idea of the truly vital importance of pumping equipment to the dual industries.

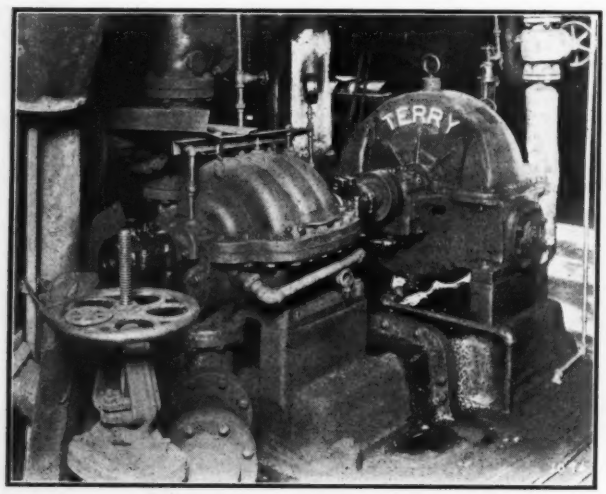
Obviously, dependence and reliability of water supply are essential in paper making, for any interruption to any of the many necessary pumps about the mills means a cessation of production with much direct and indirect loss. The pulp and paper industries present, in fact, an almost unequaled demand for high grade, dependable and efficient pumping equipment. In view of this, it is very surprising that much more has not been done by the leading pump manufacturers of the county to cultivate this important field. A wonderful opportunity for business development appears to be disregarded at the present time by, not simply one or two, but the majority of the well known pump manufacturers, for to each one of the relatively few now serving the paper industry there are several who claim they made no pumps suitable for paper mill service. Even some of the manu-



Courtesy: DeLaval Steam Turbine Co.

FIG. 2

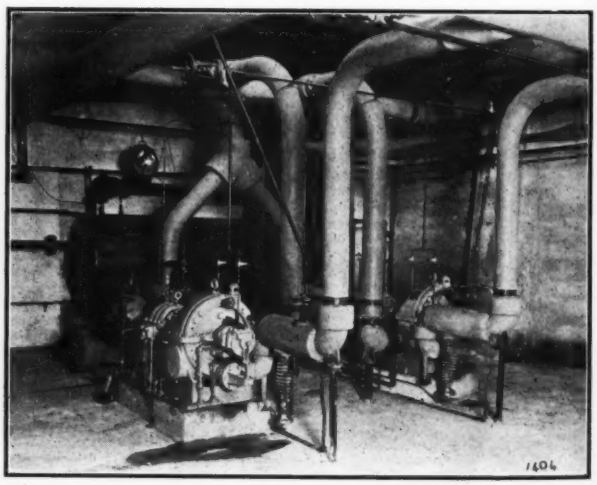
Turbine driven centrifugal feeding boilers in a far western paper mill.



Courtesy: Terry Steam Turbine Co.

FIG. 1

Typical centrifugal pump with turbine drive in boiler feed service.

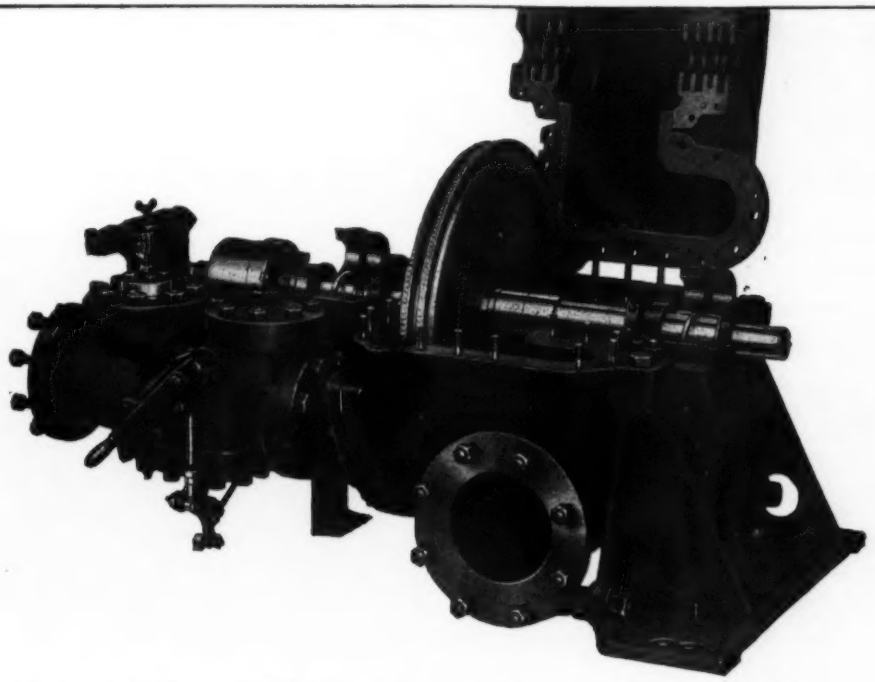


Courtesy: Terry Steam Turbine Co.

FIG. 3

Boiler feed pump layout showing approved method of supporting and anchoring the piping to relieve expansion strains.

SIMPLICITY



G-E Turbines *for* Mechanical Drive

The broad experience of General Electric, the world's largest builder of steam turbines, combined with a complete knowledge of service requirements has made possible the striking simplicity of this mechanical drive turbine.

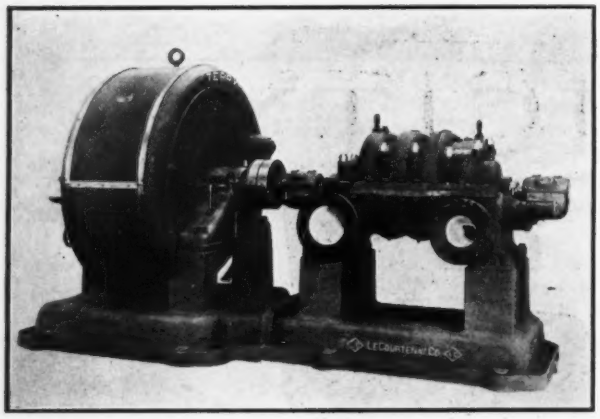
Inspection or adjustment is simplified as the wheel casings, diaphragms, bearing linings, and packing boxes are split horizontally, and the steam and exhaust pipes are connected to the lower half of the machine. Wide temperature variations do not affect the shaft alignment, because the casing is supported at the center line and expands both upward and downward. A simple adjustment permits speed variation while the turbine is operating.

General Electric turbines are backed by a nation-wide organization of specialists and service shops. Bulletin GEA-578A containing information regarding the Type D turbine for mechanical drive will be sent on request.

175-14

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

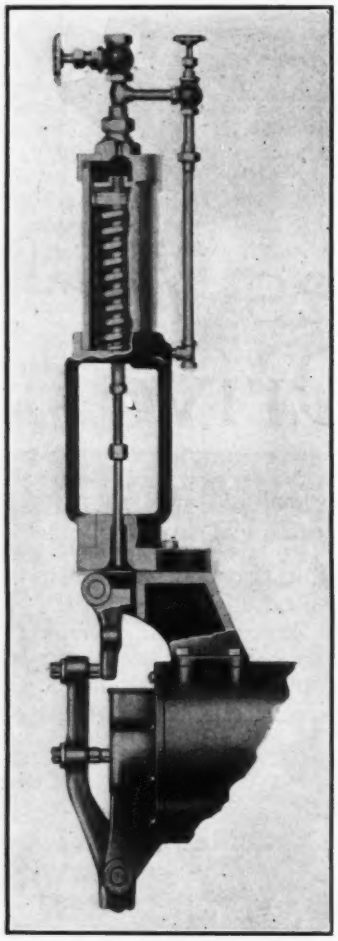


Courtesy: Terry Steam Turbine Co.

FIG. 4

Turbo-boiler feed pump for high pressure service.

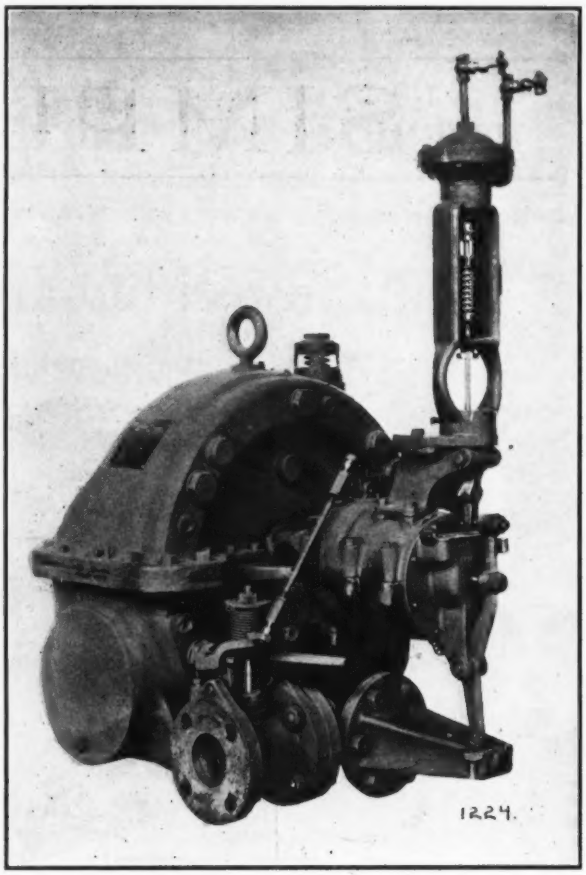
facturers most familiar to the pulp and paper industries no longer solicit business from the industries for the avowed reason that the pumps they have supplied the mills can no longer be considered up-to-date and suitable.



Courtesy: Terry Steam Turbine Co.

FIG. 5

Constant pressure pump governor functioning by controlling the steam supply to the turbine driving unit.

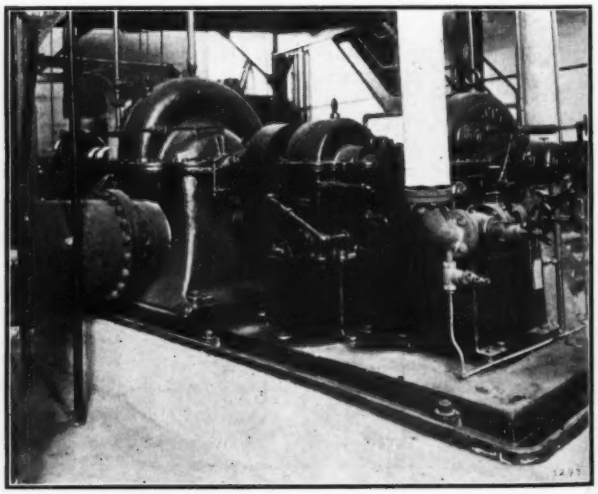


Courtesy: Terry Steam Turbine Co.

FIG. 6

Assembly of constant speed turbine governor, overspeed stop and excess pressure pump governor.

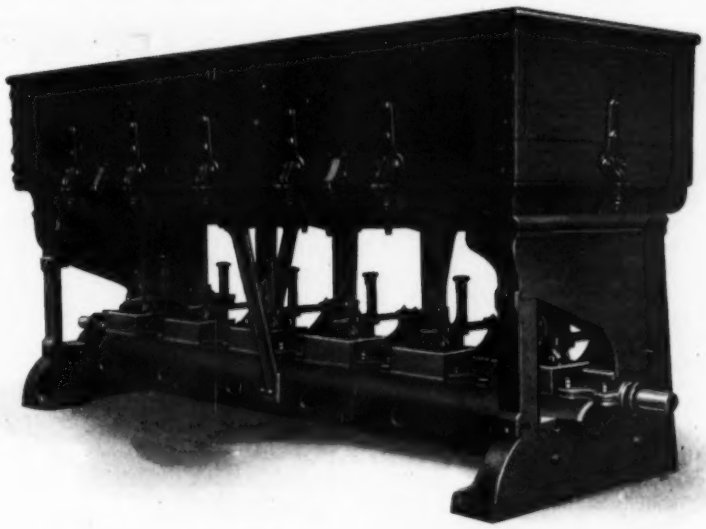
This is an extremely unfortunate situation, for it must retard progress in the industries, cost the pulp and paper mills a pretty penny each year and decidedly curtail the pump business. It is particularly embarrassing to those pulp and paper mills



Courtesy: Terry Steam Turbine Co.

FIG. 7

Typical pump unit employing a turbo-gear drive, practice recommended for large pumps or where maximum attainable efficiency is required.



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Installations in mills throughout the country are every day proving the superiority of Valley Flat Screens. The many repeat orders from present users testify to their steady performance.

Let us tell you more about Valley Flat Screens. Complete information is yours for the asking.

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Equipment Includes
Beaters: Holland and Niagara
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VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

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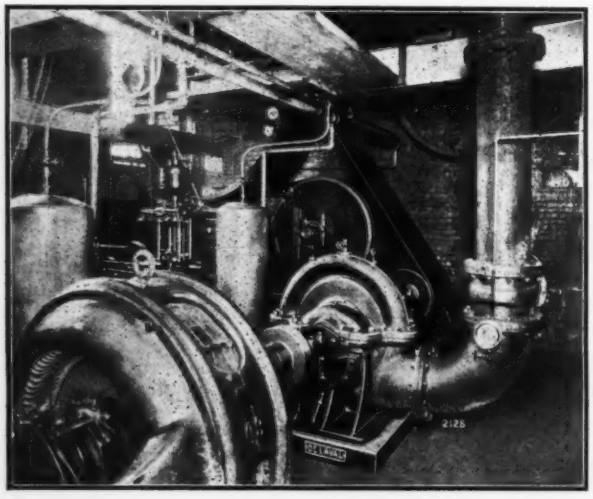
now modernizing their plants and striving to cut production costs not to have their requirements appreciated in full by the manufacturers to whom they must look for the equipment they need. For this reason, this discussion on pumps will be largely illustrative, briefly featuring approved pump installations, old and new, in pulp and paper mill services, to show the mills examples of good practice and to focus the attention of pump manufacturers upon what the pulp and paper industries are seeking. The object of the discussion, then, is to secure a dependable and wider choice for the pulp and paper industries in the selection of one of their major and most essential equipment units.

With the marked general speeding up of machinery by the introduction of electric motor and steam turbine drive during the past twenty or twenty-five years, great changes have taken place in pump requirements. Such power units have made feasible the economical use of centrifugal pumps and have made marked betterments in the efficiencies of reciprocating pumps imperative. The former have been developed to an unusually high degree and effectiveness, pumping successfully against heads of 300 and more pounds per square inch, water heads running well into the thousands of feet, and handling all kinds of liquids, including stuff pumps passing stock up to 5 per cent consistancy. These latter pumps have been very successfully employed for handling ground wood, sulphite, soda and kraft stock, etc. and for rag stock which contained no undigested strings or rags.

While the reciprocating pump still controls some important processes in paper making, some of which will be referred to subsequently, the modern tendency is to replace it with the centrifugal type wherever possible, the latter being distinguished by high efficiency, low maintenance, accessibility, compactness and absence of water hammer, valves or rubbing parts. All of these are highly important considerations in pulp and paper mill pumping services, combining as they do simplicity of pump construction, compactness and reliability with the maximum of efficiency in power transmission.

Turbine Driven Centrifugals

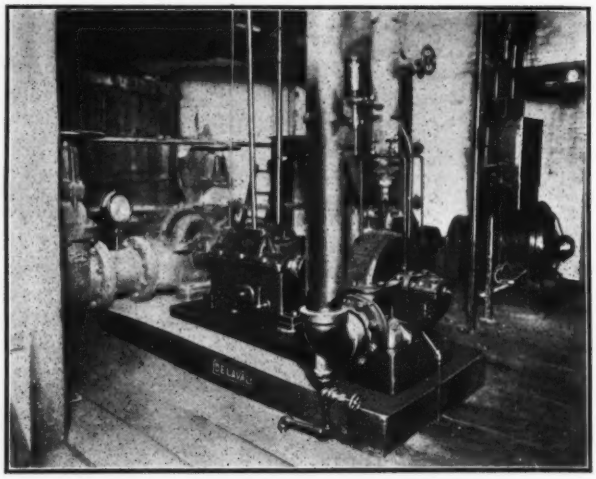
Great impetus was given to the use of centrifugal pumps by the successful driving of such units by steam turbines. This was twenty-one years ago at the power plant of one of the leading electric utilities and the pumps are still giving as good 24-hour service as when originally installed. It is in such stations that the attainment of the greatest possible efficiency and economy in the generation of power is obviously of the utmost import. Incidentally, it should also be of interest to the paper making fraternity to learn that steam turbine drives are becoming more and more popular with electric utility plants for servicing auxiliaries, etc., in spite of the fact that motor drives could readily be employed. The reason for this is that the steam turbine application is usually the less expensive, though naturally not as flexible as the electric motor drive. However, it is probably the adaptability of the electric motor to driving centrifugal pumps which has been most instrumental in bringing about the wide utilization of the pump units in the majority of industries.



Courtesy: DeLaval Steam Turbine Co.

FIG. 8

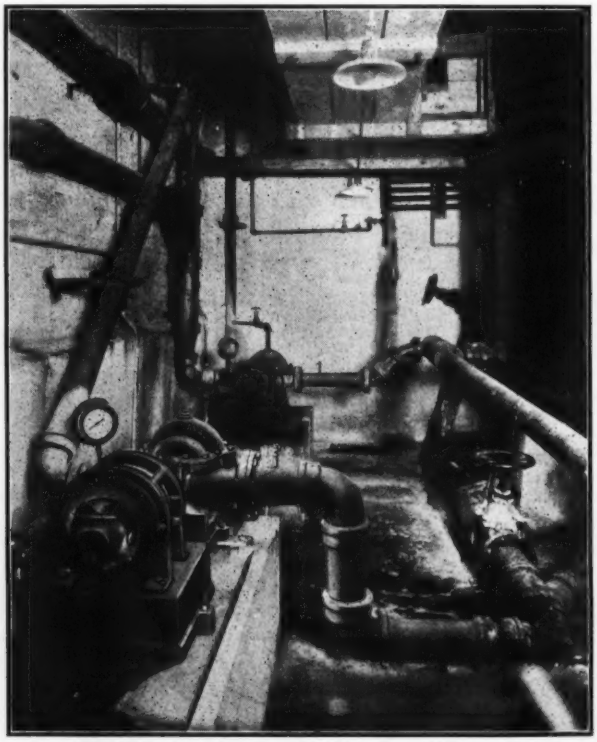
Large single-stage centrifugal driven by two 30-inch water wheels and by a synchronous motor handling water at the rate of 4,000 gals. per min. in a New England mill.



Courtesy: DeLaval Steam Turbine Co.

FIG. 9

Single stage booster pump driven by a geared steam turbine supplying 1,000 gals. per min. for paper machine sprays and vats at a New England mill.



Courtesy: DeLaval Steam Turbine Co.

FIG. 10

Circulating and clear liquor pumps for bleaching solution at New England mill.

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Du Pont Quinoline Yellow Conc. produces bright canary and lemon shades which are very fast to light. It possesses excellent solubility and works well as a calender color. In the dipping of plain and crepe tissues, where greenish yellow shades are desired, the brilliance of du Pont Quinoline Yellow Conc. is unsurpassed.

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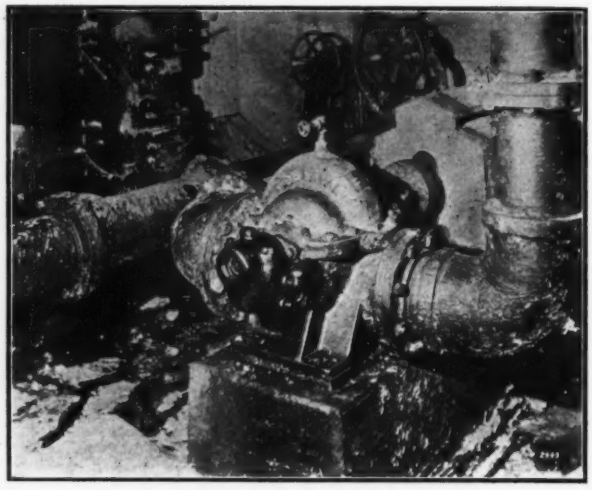
San Francisco, Calif.

As boiler feed pumps, usually turbine driven, centrifugals are eminently suitable, for both the pump and turbine being completely enclosed the coal dust and dirt which is very apt to be present does them no particular harm. The combination of turbine and pump makes a highly efficient and compact assemblage, moreover as will be noted in the typical views shown in the three first illustrations. The fourth illustration depicts still another boiler feed pump, built for high pressure service. The boiler served by this assemblage is operated at 300 pounds pressure, 250 degrees of superheat, and against 2 pound back pressure. The pump, it will be noticed, is mounted upon large pedestal bearings so that any expansions of the pump casing proper do not appreciably effect the alignment of the unit.

These turbine driven pumps are inherently very dependent, for they are not only extremely flexible of control, but avoid the dangers of being harmed by overloads, since a properly designed steam turbine cannot really be overloaded. As the power demand increases, the speed of the turbine simply decreases. The power units may also be provided with automatic pump governors, controlling the steam supply to the turbine and the speed of the assemblage in conformity with the pump discharge pressure. For boiler feed pumps, excess pressure governors to maintain automatically the pump pressure above that of the boiler by a predetermined amount have been developed. Also, control devices for maintaining constant the liquid level in a tank or other container are available. A no water stop is still another standard centrifugal pump auxiliary which may prove a valuable safeguard. It shuts down the turbine automatically if the pump is deprived of water for any reason. Power is conserved and possible harm to the pump, occasioned by operation without any liquid in the casing, avoided.

It is doubtless in the use of pumps in pulp and paper mills proper that the chief interests of the dual industries lie, however, and the use of pumps, first those of the centrifugal type, in such services can best be shown largely pictorially, by examples of various approved applications. This will be the plan pursued, consequently, but no particular order will be followed in presenting the views other than to group similar illustrations together, so far as possible, culling the illustrations from illustrations in various mills. The first three of these mill service views are from one of the New England mills, however, being segregated in this way to illustrate how many individual mills have built up their pumping equipment gradually along modern lines on the strength of demonstrated pump economies.



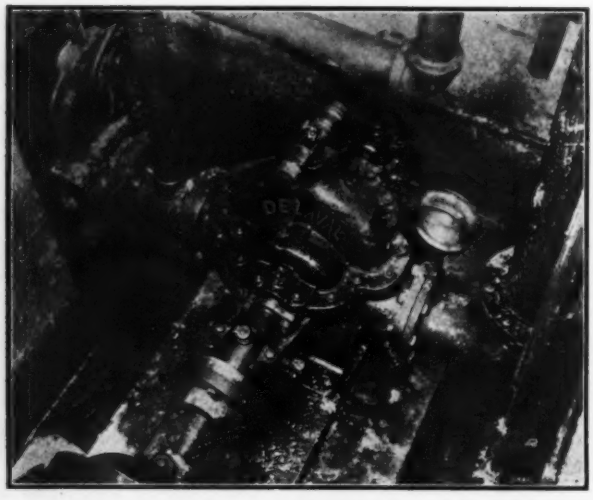
Courtesy: DeLaval Steam Turbine Co.

FIG. 12

Open impeller type circulating 3 per cent stock in paper machine stock chest.

This particular mill first tried out two centrifugal pumps some ten years ago and has since installed additional units of this variety as they have been needed. A 12-inch single stage centrifugal belted to two 30-inch water wheels and also connected to a synchronous motor now delivers 4,000 gallons of water a minute, against 104-foot head, to five machines in the paper mill. This unit has been in continuous 24-hour service, 300 days a year, since installation. The paper machine sprays and the vats are supplied by an 8-inch single stage booster pump driven by a geared steam turbine to secure the maximum possible efficiency. The pump operates against a 65-foot head, exhausts against 4-pound back pressure, and delivers 1,000 gallons a minute. The circulating pump and the clear liquor pump for making the bleaching solution from liquid chlorine and lime are served respectively by a 5-inch single stage pump delivering 400 gallons per minute against a 30-foot head and a 3-inch single stage pump delivering 2,000 gallons per minute against a 40-foot head.

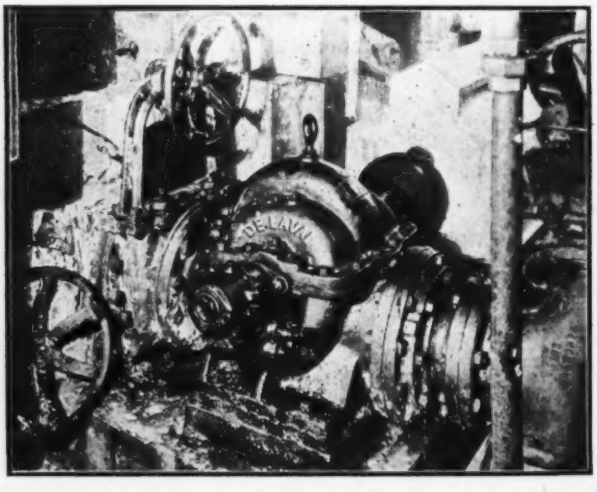
The next four views illustrate pulp pump applications handling 3 per cent stock in some of our important western



Courtesy: DeLaval Steam Turbine Co.

FIG. 11

Open impeller type pump handling 3 per cent stock from broke beater to deckers.

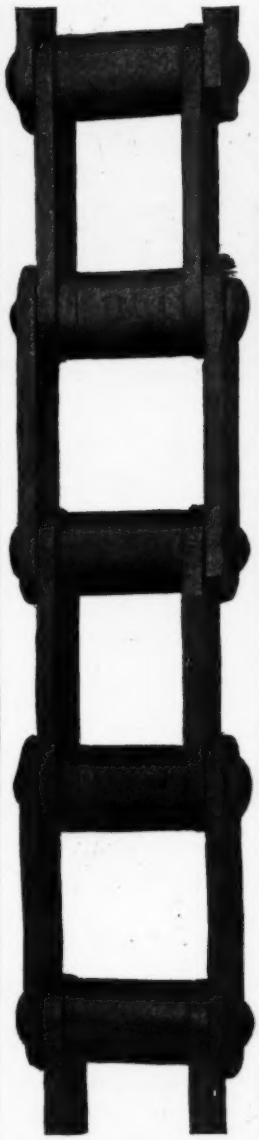


Courtesy: DeLaval Steam Turbine Co.

FIG. 13

Open impeller type pump handling 3 per cent stock from decker stock chest to beaters.

Jeffrey Chains for Every Service



Jeffrey Hercules Chain for drives and rough service handling pulpwood, coal, etc.

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Here are two methods of distributing coal to bunkers in the boiler house.

THE SCRAPER CONVEYOR is flexible in design, operating on the horizontal, incline, or any combination of the two. Built in single and double strand chain types for various capacities and sizes of coal.

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Locomotives
Coal Mine Equipment
Tipple Equipment
Ventilation Fans

mills, all of the same general type. But each performing a different service. The first of these shows an open impeller type pump handling the stock from the broke beater of a paper machine to the deckers; the second, a similar centrifugal circulating the stock in a paper machine stock chest; the third, another such pump handling the stock from the decker stock chest to the beaters; while the fourth shows the pump handling the stock in a stock chest of a Rogers machine. The latter pump has a capacity of 500 gallons a minute, against 50-foot head, at 1,150 r.p.m.

The view showing an open impeller pump direct connected to a motor, taken in a mill in Oregon, depicts the pump handling 2 per cent stock from the rifflers to the flat screens. The pump is able to deliver 2,000 gallons per minute against a 48-foot head when driven at 1,750 r.p.m. The handling of lighter stock, 8 per cent density, by an 8-inch pulp pump in a Canadian mill is shown in the next view. This pump, at 1,150 r.p.m., delivers 1,350 gallons per minute against a 50-foot head.

Another interesting centrifugal pulp pump installation, not illustrated, which has recently been made is at the plant of the Taggart Oswego Paper and Bag Corporation. It handles 4 per cent kraft pulp, 800 gallons per minute against a total head of 175 feet, when run at 1,750 r.p.m. A 100-horsepower motor is employed to drive this pump.

The handling of the white water in connection with the paper machine is also a service for which centrifugal pumps are well adapted. Two interesting views of pumps so employed are shown, both applications of open impeller type pumps, and a view of a similar closed impeller type pump taking the white water from the white water chest to the screens at a plant in Oregon. Following, is a view of an open impeller booster pump serving between the blow-pit stock chest and the screens.

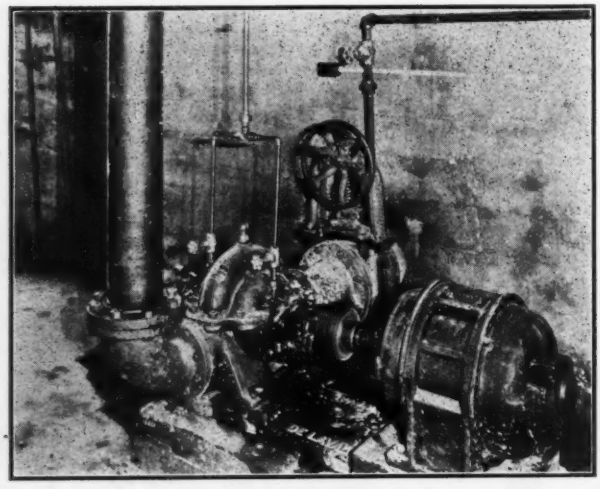
A novel and interesting white water pump application is shown in the next view, the pump installed under a drain collection vacuum tank to remove the white water. The pump is a single stage, double suction pump handling 450 gallons per minute at 1,150 r.p.m. against a total head of 38 feet. The vacuum in the tank from which the white water is removed is 28 inches of mercury.

The final illustration of this series of centrifugal pump views in pulp and paper mill services shows an unusually compact and efficient general water supply pumping system in a north-central mill. The pump delivers 7,000 gallons per minute and is termed by the chief operating engineer of the mill "a very good pump".

Specific Examples of Pump Accomplishments

While these illustrations all give some indication of the pump demand in pulp and paper mill activities, greater interest naturally attaches to what may very properly be termed the benefits of appropriate pump assemblages in specific mill services, including such cost data as can be presented. In the case of the B. F. Nelson manufacturing Company, for instance, records show that the installation of two centrifugal pumps some ten years ago has proved a profitable venture.

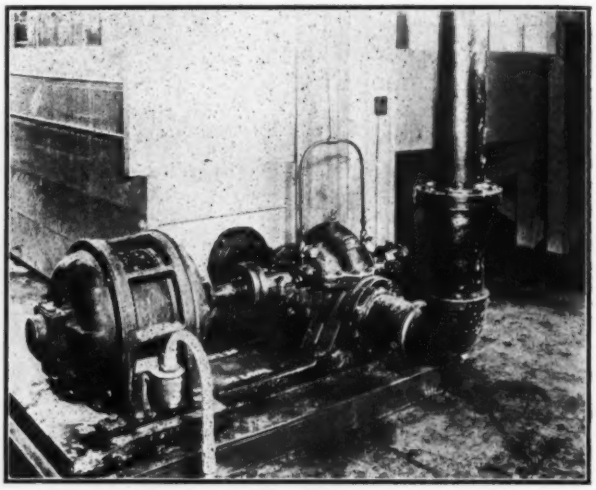
One of these pumps has a capacity of 1,250 gallons per minute and the other a capacity of 1,750 gallons, both operating against a 110-foot head. The pumps are in continuous operation, 24-hour



Courtesy: DeLaval Steam Turbine Co.

FIG. 14

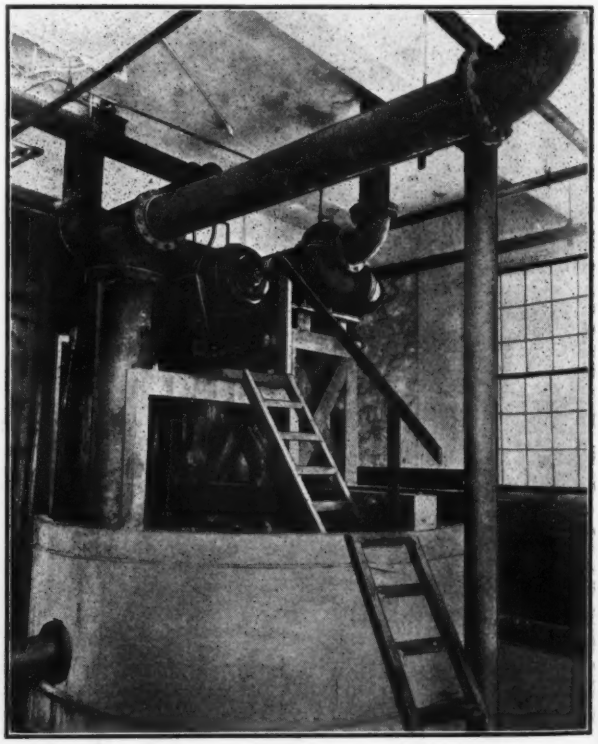
Open impeller type pump handling 3 per cent stock in stock chest of a Rogers machine.



Courtesy: DeLaval Steam Turbine Co.

FIG. 15

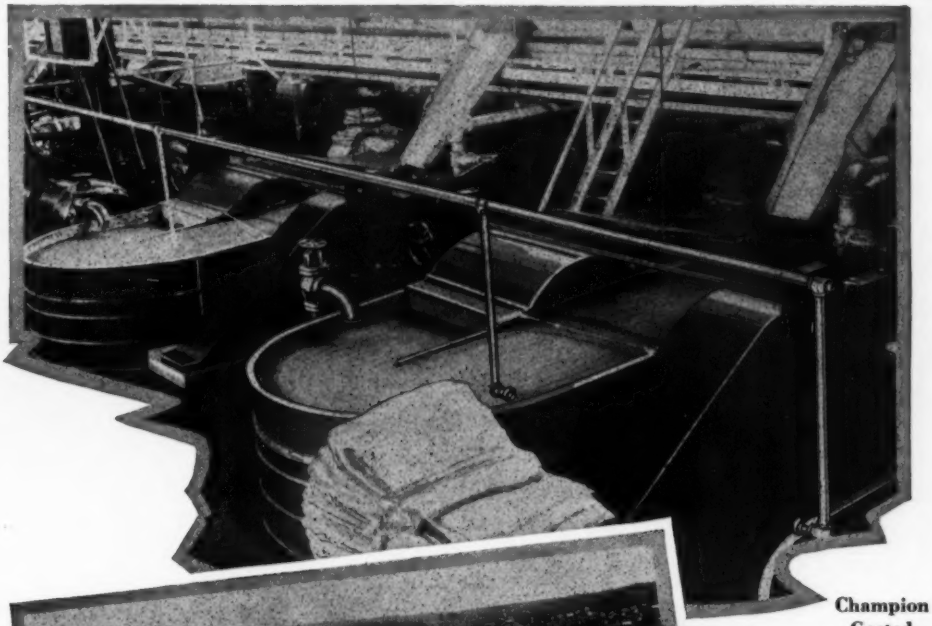
Open impeller type pump handling 2 per cent stock from rifflers to flat screens.



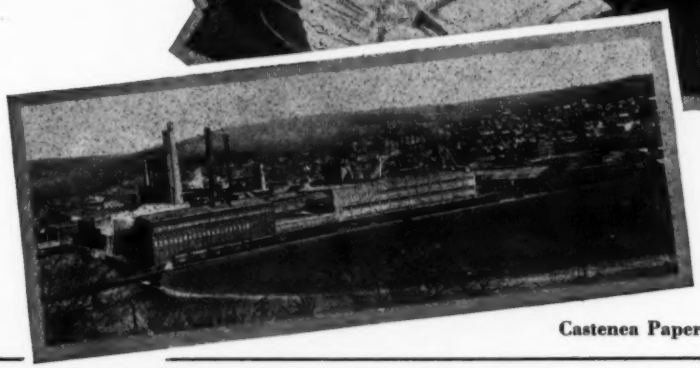
Courtesy: DeLaval Steam Turbine Co.

FIG. 16

Pulp pump handling 1,350 gals. of 1 per cent stock per min. against 50 foot head.



Champion Coated Hamilton, Ohio



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TOO many paper mills now use Daytons for any one to question the ability of Dayton High Speed equipment to improve beating conditions, and lower beating costs. When mills of the prominence of the Champion Coated at Hamilton, Ohio, and the Castenea at Johnsonburg, Pa., find it good business to keep on buying Daytons as fast as they can, other mills can ill afford to "pass up" any opportunity to make a serious investigation of Dayton performance. Why not delegate some one in your organization to start a "Dayton" investigation? We'll supply the list of Dayton users—you to ferret out the facts wherever you will. That's fair. Let's start Now.

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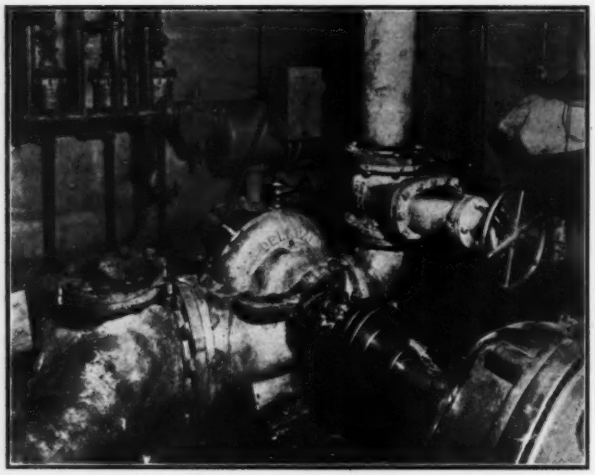
DAYTON

HIGH SPEED BEATERS



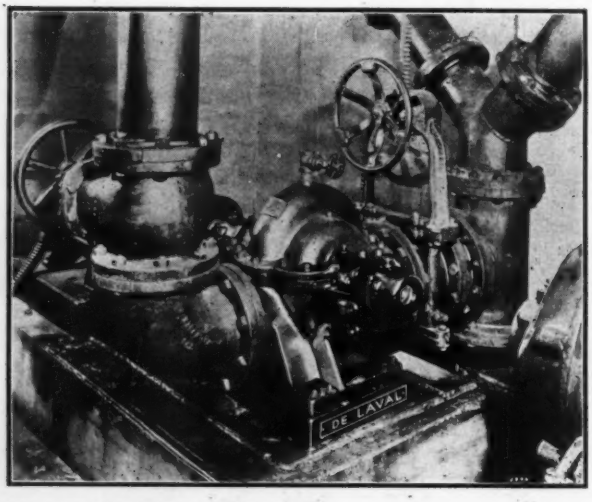
Courtesy: DeLaval Steam Turbine Co.

FIG. 17

Centrifugal handling white water in connection with a paper machine.

service for 280 days a year, and in six years the bearings on the pumps have required rebabbitting only once. The sealing rings are customarily replaced once a year, it is true, the spring floods charging the water supply with quantities of silt and fine sand, but with this exception and the daily inspection, requiring 30 minutes a day, no other attention or repairs are said to have been necessary. Resolved to a dollar and cent measure, the total pumping cost of supplying 3,000 gallons per minute is a matter of less than 6 mills ($0.0059) per 1,000 gallons of water delivered.

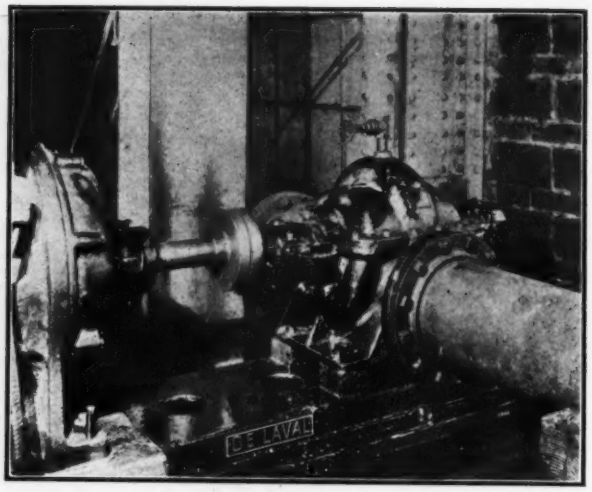
A pump assemblage, consisting in all of over four hundred pumps, of pertinent interest is at the Cumberland Mills of the S. D. Warren Company, for the installation well shows the economy and dependability of high grade pumping equipment. Both centrifugal and reciprocating (triplex piston) pumps are in service and as it is out of the question to comment upon the behavior of all the pumps in operation, a dozen or so may be selected for consideration, six reciprocating and seven centrifugal units. While the former variety of pump includes those units longest in service, from fourteen to twenty-two years, the centrifugals having been in use only from seven to ten years, they discharge services which would be in some cases, at least, beyond the ability of successful



Courtesy: DeLaval Steam Turbine Co.

FIG. 18

Open impeller type pump handling white water from a paper machine.



Courtesy: DeLaval Steam Turbine Co.

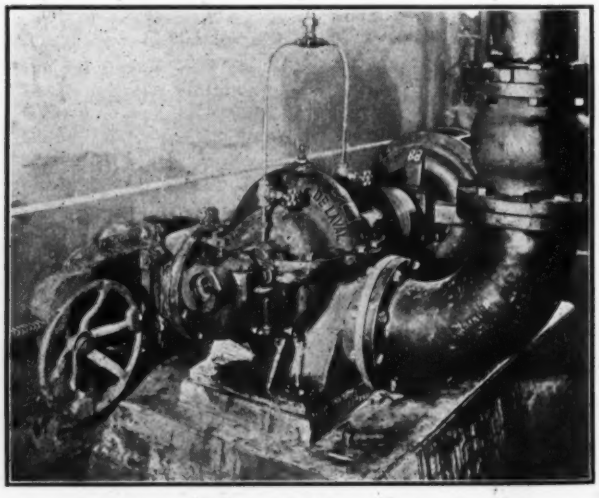
FIG. 20

Open impeller type booster pumping from blow-pit stock chest to screens.

accomplishment by centrifugals. This clearly demonstrates that the reciprocating pump still has a distinctive and important roll to play in pulp and paper mill services.

The reciprocating units, which are all belt driven, handle thick clay for the coating department, Silkote coating, stuff for the large machines and serve the suction boxes. The centrifugals, on the other hand, handle the white water, straight chlorine liquor, black liquor for soda reclaiming, hot black liquor for the digester and wash water for the filters.

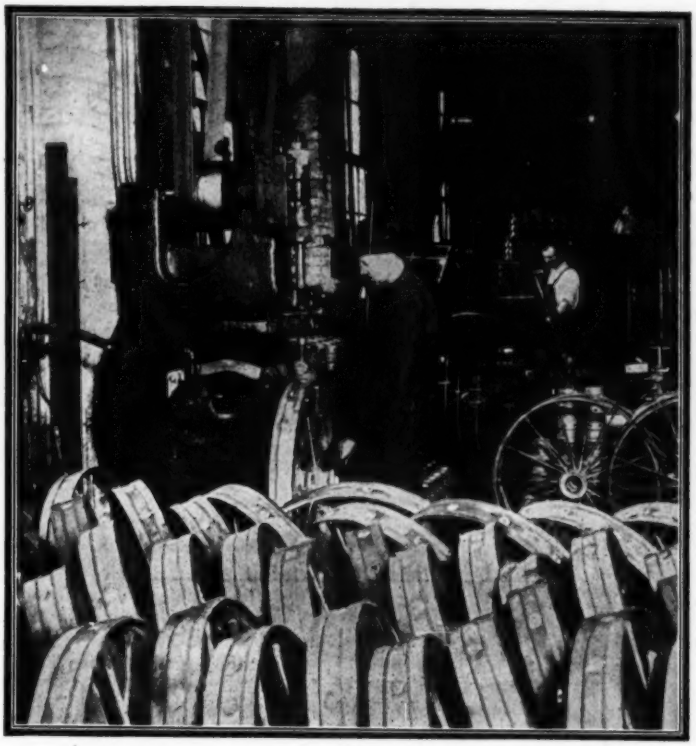
Commenting upon the behavior of these pumps, a fact commanding attention is that the triplex clay pump, a 7 x 8 inch unit, handles material successfully which is so thick and heavy that as it drops from the discharge line of the pump into a mixing kettle it piles up until pushed over by the agitator. Such arduous service has been discharged satisfactorily by the pump for the past fourteen years and before this the pump was used for some ten years in other service. For the heavy clay work, the pump has had to be equipped with 24-pound ball valves in order to close against the dense material. Prior to being drafted for the clay service, the pump was furnished with 11-pound valves of the same type, but these proved too light for the clay.



Courtesy: DeLaval Steam Turbine Co.

FIG. 19

Closed impeller type unit pumping from the white water chest to the screens.



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Frequently, to obtain proper lubrication, a careful investigation by experts is necessary. The Standard Technical Staff, working for years between our refineries and varied industries, has become expert in solving lubrication problems and has developed a full line of efficient lubricants for practically every industrial need.

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MODERN methods of intensive production and the widespread use of high-speed machines have increased the importance of effective lubrication.

At the same time the problems of getting maximum results from lubrication have multiplied. Higher speeds, continuous operation and wide variations of working conditions have placed the study of correct lubrication on a scientific basis.

That a scientific study of lubrication problems pays is testified to by the Grain King Manufacturing Company. Three years ago Standard Oil Company (Indiana) studied the lubricating requirements of this company and recommended certain Standard Lubricants. After three years use of these lubricants the general manager comments as follows: "It is needless to say that we are satisfied with the quality and service rendered. You have an engineering service that has analyzed the conditions in the factory and advised us where a certain oil can be applied to cause greater efficiency to machines."

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				Green Bay		

1408

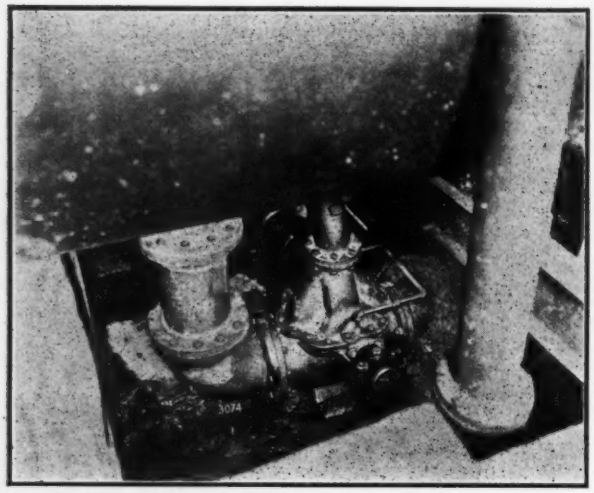
A 3-inch centrifugal, used for handling the chlorine bleaching liquor, pumps 250 gallons a minute against a 70-foot head, drawing the liquor through a quarter of a mile of 3-inch pipe to an open tank in the bleach plant. This liquor carries considerable grit which cuts the packing and gets into the pump bearings, so duplicate pumps are employed, alternately working for periods of two weeks each. While one pump is in service, the other is repacked and overhauled for the next service period.

The black soda liquor from the digesters is handled by another 3-inch centrifugal with a suction lift of 10 feet and a total head of 35 ft. Though the black liquor runs from 190 to 214 degrees Fahrenheit in temperature, the pump has been in almost continuous service for going on to ten years. Previously, this liquor was handled by a duplex piston pump, but the fluctuating character of the load, the reciprocating movement of the pistons and the tendency of the liquor to form vapor pockets caused such pump to wear seriously, necessitating its being taken down for repacking and repairs about every second day.

The steam cost of the duplex pump was quite low, as its exhaust went to the dryers, but the heavy attendance and maintenance expenses brought its net operating cost up to that of the centrifugal with its more costly motor drive, by which it was replaced. The total annual operating costs of the two varieties of pumps are said to be very nearly on a par, the chief advantage of the centrifugal being that it renders continuous service with a minimum of attention.

Another pump assemblage of interest, reference to which may well conclude this cursory exposition of pumping installations in the mill and power plant, is at the Bowdoin Mills of the Pejepscot Paper Company. Here, efficient triplex piston pumps have been in service for many years, one for thirty-seven, and a single, double suction, centrifugal pump has been in steady operation for eight years. Another triplex pump has seen twenty-two years of service and a third, which is about fourteen years old, serves as a spare for the centrifugal and formerly was operating continuously.

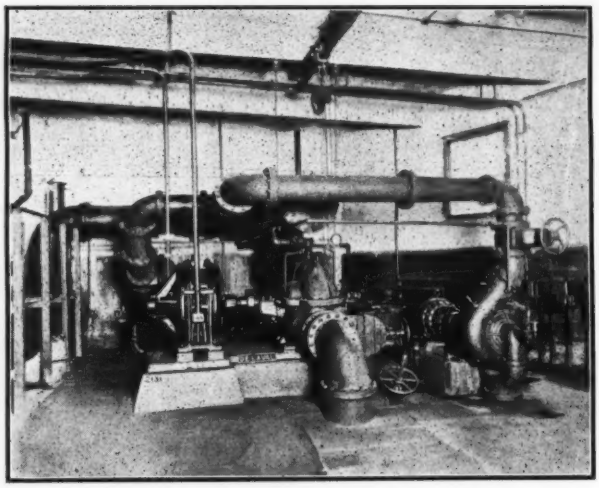
The centrifugal and its spare receive filtered water under 10-foot head and force it under 20-pound pressure to the showers on the No. 1 machine. The twenty-two year triplex handles the white water from two suction boxes on another machine and maintains a vacuum of from 7½ to 8 inches. The old triplex is an air pump and handles air and approximately 140 gallons of white water per minute from the No. 1 machine and five suction boxes. It is driven by a belt and after thirty-two of its long years of service



Courtesy: DeLaval Steam Turbine Co.

FIG. 21

Double suction centrifugal removing white water from drain collection vacuum tank.



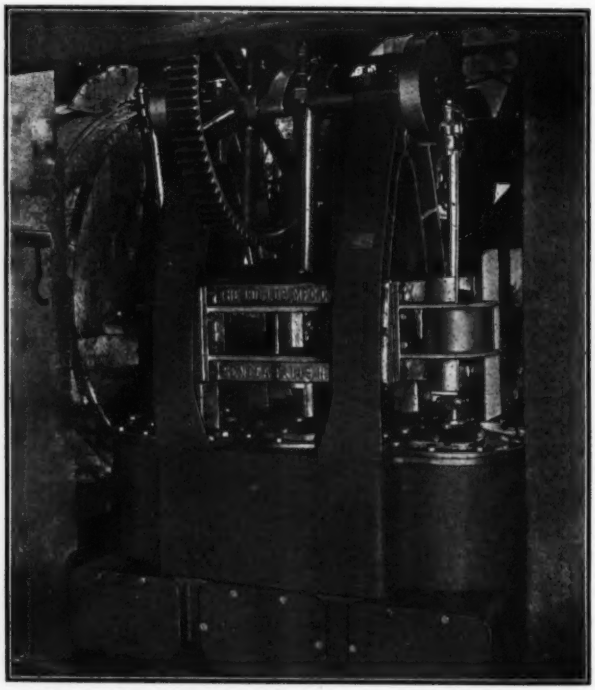
Courtesy: DeLaval Steam Turbine Co.

FIG. 22

General water supply pump delivering 7,000 gals. per min.

was taken down and completely overhauled. Since then, the only maintenance expenses incurred have been on the valves and for packing. Including the overhauling expense, the net operating cost of the pump, covering all fixed charges, operating costs and maintenance expenses during the demonstrated long life of the pump, has proved to be less than 90 cents a day, exclusive of the power cost burden. Including the necessary power expense, furthermore, the hourly net operating cost of the pump is under 22 cents. This certainly is a convincing confirmation of the value of pump dependability in paper mill service.

There are, of course, many other applications of pumps in the pulp and paper mill industries, other varieties of pumps of well



Courtesy: Goulds Pumps, Inc.

FIG. 23

14 x 12 inch triplex air pump which has served the Bowdoin Mills of the Pejepscot Paper Company 37 years.

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Two belts on the floor may look as much alike as two cogs in a wheel.

Specifications the same—yet six months' operation shows a difference. In a year one is junked—the other is still going strong.

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established value for specific mill services and numerous pumping devices of merit in connection with the operation of auxiliaries and for the economical conduct of certain process operations, but the foregoing should suffice to focus the attention of the mill operators upon the essential nature of pumping equipment in the conduct of their activities and to give the pump manufacturer who has overlooked the paper mill field some idea of what the dual industries require in the pump line. Subsequent discussions will deal further with the same and kindred subjects, with the view of stimulating interest in all types of equipment which aid in minimizing production costs and increasing the efficiency of the tools employed in paper making.

Paper and Pulp Section of Safety Congress

What has been accomplished in accident prevention during the past year in the paper and pulp industry will be discussed at the Seventeenth Annual Safety Congress, which will be held at New York City from October 1 to 5, inclusive. The Paper and Pulp Section of the National Safety Council will convene on Monday, October 1, when a luncheon will be held at the Waldorf-Astoria Hotel. There will be reports of officers and brief talks by the various regional directors of the section.

On Tuesday morning, October 2, the first address on the program will be a speech by W. F. Ashe, of the Thilmay Pulp and Paper Company, who will talk about "The Relative Importance of the Plant Safety Department." C. H. O'Connell, Safety Engineer, International Paper Company, will dwell on "Some Outstanding Hazards in Paper Mills and Their Control." Dr. J. G. Cunningham, Director of Industrial Hygiene, Department of Health, Toronto, Canada, is to tell of "The Promotion of Health in Conjunction with Safety."

On Wednesday morning, W. H. Blackwell, of the Public Service Corporation of N. J., will discuss "The Importance of Lighting and Its Relation to Safety." P. H. Hourigan, M. D., Plant Surgeon, Larkin Company, Buffalo, N. Y., will discuss "How to Administer First Aid in Both the Small and the Large Plant."

Following the Wednesday morning meeting, there will be a luncheon session at which F. L. Irvin, Supervisor of Employment, St. Croix Paper Company, Woodland, Me., will dwell on "The Influences and Results of Safety in Our Plant," after which the winners of the paper industry annual safety contest will be awarded the trophies. Homer E. Niesz, President of the National Safety Council, will present the council trophies and Edward B. Fritz, Publisher of *The Paper Industry*, will present the trophy offered by that periodical.

Inland Empire Paper Co. Votes Expansion

PORTLAND, Ore., September 1, 1928.—At the annual meeting of the Inland Empire Paper Company's officials held the last week in August it was decided to proceed with a big program of expansion in the mill at Millwood near Spokane. This plan has been under consideration for about a year.

The management of the building program was instructed to complete plans and specifications for a modern highspeed paper machine which will double the capacity of the plant.

The power project in the Spokane River near Millwood which the company has also been considering, and for which they have made surveys and bought overflow rights, is still under consideration.

Judson G. Rosebush of Appleton, Wis., was re-elected president, and all other old officers and trustees were re-elected as follows: L. M. Alexander, vice-president, St. Petersburg, Fla.; W. A. Brazeau, secretary and sales manager, Millwood; Waldo Rosebush, treasurer and general manager, Spokane.

Trustees: L. M. Alexander, J. E. Alexander, Judson G. Rosebush, W. H. Cowles, W. H. Cowles, Jr., W. A. Brazeau and Waldo Rosebush.

Joseph A. Jeffrey Dead

[FROM OUR REGULAR CORRESPONDENT]

COLUMBUS, Ohio, September 4, 1928.—Joseph Andrew Jeffrey, 92, chairman of the board of directors of the Jeffery Manufacturing Company, died at his home, 1440 E. Broad street, Monday, August 27, at 6:30 a. m. from infirmities.

Mr. Jeffrey was founder of the company that bears his name and was one of the founders of the Commercial Bank.

From a small beginning in 1877, Mr. Jeffrey saw his plant grow steadily. It now employs 3500 men, covers 33 acres of ground and in addition to mining machinery manufactures elevating, conveying and crushing machinery and electric haulage locomotives.

Mr. Jeffrey came to Columbus in 1858 after receiving his early education in the public schools of Clinton and Auglaize counties.

He was born in Clarksville, Clinton county, the son of James Jeffrey, a native of Monmouth County, New Jersey, and Angeline Robinson Jeffrey, a daughter of David Robinson, pioneer settler of Warren County.

He engaged in the banking business in Columbus and helped found the Commercial National Bank.

On October 2, 1866, he married Celia C. Harris, daughter of Joseph Harris and Deborah Clark Harris of Columbus.

How Jeffrey saw his opportunity in the mining machinery business reads like an Horatio Alger tale. He was among hundreds of business men who gazed at model mining machinery in a Columbus store window in 1877.

But he was the only one of the hundreds to recognize the revolutionary effect that the machinery, invented by Francis Lechner, who was considered a dreamer by his Columbus friends, would have on the mining industry.

The new machinery, built with a cutterbar that satisfactorily undercut coal, was made to make easier the work of cutting coal, heretofore done by hand with picks.

Mr. Jeffrey arranged with Lechner to manufacture the machinery, first perfecting it. The Lechner Mining Machine Company was formed.

In 1883 the company required Mr. Jeffrey's full attention and he sold his interests in the Commercial National Bank. He turned from banker to manufacturer.

The company changed its name to the Lechner Manufacturing Co. the same year and Mr. Jeffrey assumed control. It did not change its name to the Jeffrey Manufacturing Company, however, until 1887.

The coal mining invention caused an upheaval in the mining industry and the output of coal in the country was enormously increased. Mr. Jeffrey had gauged the great need for the machinery correctly.

Friends and business associates of Mr. Jeffrey say he was not only a keen business executive but that he also had a sympathetic understanding of men. He believed in the mutual interest of employer and employe and sought to instill a fine spirit of co-operation among his men.

Superintendents to Meet at Niagara Falls

The fall convention of the Northern New York Division of the American Pulp and Paper Mill Superintendent's Association will be held in Niagara Falls, N. Y., on Saturday, October 13, 1928.

M. J. Argy and Fred J. Rooney are acting as Joint-Chairmen and H. W. Brennan is acting as secretary and treasurer.

The committee wishes to assure the members that they are going to do their level best to give them a real good convention and a good entertainment in the evening, with an informal banquet. The party will be for the members and their wives.

Reservations may be had by communicating with H. W. Brennan, care Cliff Paper Company, Niagara Falls, N. Y. Hotel Niagara will be the official headquarters but members may choose their own accommodations.

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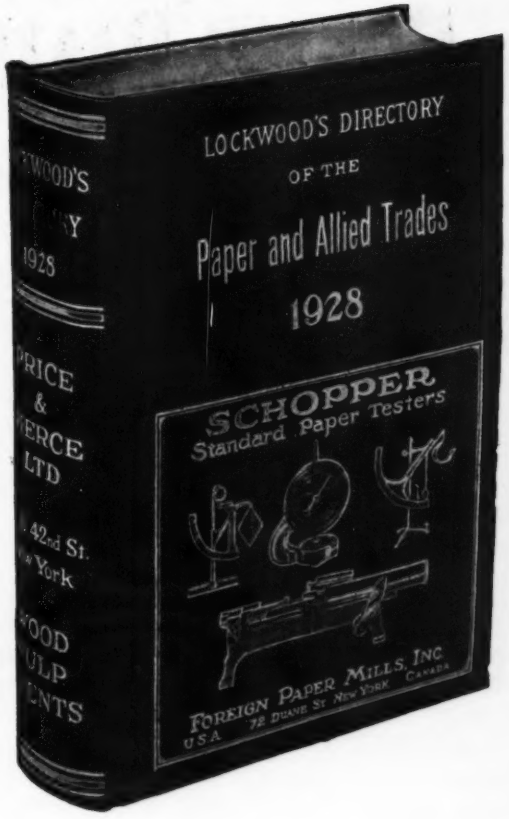

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PAPER MAKING MATERIALS

The revised edition of Paper Making Materials, which is being published by the Lockwood Trade Journal Company for the Technical Association of the Pulp and Paper Industry is just off the press.

Under present manufacturing conditions the pulp and paper industry, with an invested capital of nearly $1,000,000,000, stands in a more precarious position than any other forest industry for domestic supplies of suitable timber. The pulpwood cut in 1906 was 2,922,304 cords, in 1916, 4,444,565 cords, in 1926, 5,489,517 cords. For the same years, there were imported 737,872, 783,993 and 1,276,490 cords, respectively. These facts account, in part at least, for the continued interest in so-called wood substitutes, and for the numerous laboratory and semi-commercial trials on all sorts of vegetable products as possible raw materials for the manufacture of pulp.

In 1920, Dr. Clarence J. West, Chairman of the Committee on Abstracts and Bibliography of TAPPI. issued a reading list on paper making materials, exclusive of woods, which was reprinted by Arthur D. Little, Inc. and given a fairly wide circulation. The edition was soon exhausted and the continued demand for the publication, as well as the numerous contributions to the literature during the past eight years, seemed to warrant the preparation of a revised edition.

In this new edition, not only has the literature, which includes both patent and journal citations, been brought up to date, but references have been added for practically all the woods used in papermaking, with special emphasis on the work done by the Forest Products Laboratory and the Imperial Institute of England. In practically all cases the bibliographical information has been entered under the botanical name of the species, but cross references are given under all of the common names to the botanical names, so that no difficulty is experienced in locating a given raw material. To further facilitate reference, a straight dictionary arrangement is used for all the entries.

This work should prove of interest to all manufacturers of paper, as an indication of those products which have been tested as paper making materials. It makes available to the industry a key to the experiences of investigators who have tested these materials and will help to explode the claims of originality for the use of many materials, reported from time to time as a "Discovery of a wonderful new raw material for paper making."

The use of the corn plant is a typical example of the repeated "discovery" of a new raw material. As early as 1802 we find a U. S. patent granted for the use of corn husk for paper. In 1837 a Frenchman published a 213 page book, in which he discusses the use of the corn stalk. About 1863 the question was again reviewed by the work of Auer von Welsbach. The use of corn stalks was again agitated about 1902-1903, and in 1910, a "new paper material" which was advocated was nothing more than corn stalks. Finally in 1927 the much discussed Dorner process was discovered. Thus for a period of 125 years the question of the corn plant has reappeared at periodic intervals. All this history can be traced through the references in Paper Making Materials.

Among the more important materials covered are bagasse, bamboo, papyrus, eucalyptus, cotton seed hulls and linters, cotton stalks, grasses, hedychium coronarium, hemp, flax, banana fiber, the various straws, peat, phragmites communis (reed grass), the numerous pines, firs, spruces, poplars, and other woods, both domestic and foreign, reeds, Savannah grasses, esparto grass and corn stalks.

Among the curious materials which have been suggested or tried for paper making are sponges, mummy cloth, mosses, dead leaves, orange pulp, pine cones, pine needles, poplar down, seed down, preserved tomato residue and many others which will be found by an examination of the list.

It may be pointed out that the major portion of this work will not appear in the forthcoming "Bibliography of Paper Making, 1900-1928," which has been complied by the Chairman of the Committee on Abstracts and Bibliography for TAPPI. It seems undesirable to increase the size of the bibliography by including the material covered in "Paper Making Materials," especially since the plan adopted for the bibliography does not permit the inclusion of the detail found in the publication under review.

(The book contains 239 pages, is attractively and substantially bound in cloth and sells at $3.00 per volume postpaid. It may be ordered from the Lockwood Trade Journal Company, 10 East 39th street, New York.)

BUSINESS GOOD AS ELECTION NEARS

The Presidential campaign is having slight effect on business conditions, according to the August monthly survey of the National Association of Credit Men, which says that the current of business is flowing smoothly, undisturbed on the surface by either sluggish or turbulent movements usually present in a general election year.

"The presidential year ghost seems to have been laid," the survey says. "With the election only two months away, and with business in good health, one is disposed to ask where are the throes of yesteryear?" The survey says that the business indices, taken as a whole are favorable.

"The leading industries have not been seriously affected by seasonal production slumps, and crop conditions are, in general, most encouraging," it states.

"Farm income promises to be materially larger than it was a year ago. The farmers' increased buying power is estimated to be as much as $800,000,000.

"Wholesale trade is satisfactory in all but a few lines; and retail trade in some parts of the country is noticeably buoyant.

"Production holds up well. Steel established a new record for July in spite of the small amount of business received from the railroads.

"Motor manufacture has proceeded so vigorously during the summer that predictions are being made of 1928 totals in excess of all preceding years. Textile operations are still below normal, but the shoe factories are more active, the makers of rubber footwear being particularly cheerful.

"Building construction continues at unprecedented levels. Construction contracts in the 37 Eastern states aggregated $583,432,400 during July, the highest July total on record, exceeding the figures for July last year by nine per cent.

"Contracts awarded during the first seven months of 1928 aggregated $4,028,299,900, which is greater by eight per cent than the total for the first seven months of 1927.

"Car loadings went over the million mark for the week ending August 4, when 1,048,622 cars of revenue freight were loaded. Bank clearings in large cities for the week ending August 16 aggregated $9,266,427,000, a decrease of 2.4% from the preceding week, and of 7% for the corresponding week of 1927. Commodity prices rose slightly during August."

R. S. Kellogg Speaks at Keene, N. H.

KEENE, N. H., September 5, 1928.—"From the act of Congress authorizing Federal Forest Reserves in 1891 to the McSweeney-McNary law of 1928 is a long advance in forest protection and utilization in the United States," said R. S. Kellogg, Chairman of the National Forestry Program Committee, speaking here last night at the annual meeting of the Society for the Protection of New Hampshire Forests.

"But the intervening thirty-seven years from Cleveland to Coolidge were fruitful ones," continued Mr. Kellogg, "else we should not this year have obtained Federal provision for fundamental forest research, broad in scope and permanent in character. Intermediate steps were not easy of accomplishment, because the unwillingness of Congress to act was a natural reflection of uninformed or indifferent public sentiment. Yet there were always resolute leaders who knew what must be done and whose efforts were increasingly augmented by the public press. Thus it was that each succeeding measure in the forest conservation program passed more readily than its predecessor.

"The law approved by Roosevelt in 1905 which transferred the control of the forest reserves from the Department of the Interior to the Department of Agriculture and substituted scientific for political management was strongly opposed; it took ten years of persistent effort to secure the enactment of the Weeks law signed by Taft in 1911 enlarged by the Clarke-McNary law and further expanded by the McNary-Woodruff law of 1928, which made possible the purchase of lands for National Forests in the Eastern states; four years of organized effort were required to secure the adoption of the Clarke-McNary law originally endorsed by Harding and signed by Coolidge in 1924, which firmly established the principle of cooperation on the part of the Federal Government with the states and the timberland owners in the protection of forests from fire, their greatest enemy. Contrast with these efforts the fact that within three months of the hearings thereon by Congressional committees and within fifteen months of its first official appearance the McSweeney-McNary bill passed both houses without a dissenting vote or without the elimination of a single paragraph from the original draft. This is conclusive evidence of the awakening of the nation to the importance of protecting its forest resources.

"The necessary basic Federal legislation has now been enacted. The Federal statutes authorize the administration of the National Forests upon a permanent plan for watershed protection, timber production and recreation for the people. There is a nation-wide cooperation with states and timberland owners in the protection and extension of the private forests which must always furnish the bulk of the wood we use. A comprehensive survey of timber supplies and requirements and a longtime program of fundamental forest research by five Bureaus of the Department of Agriculture is set up by the McSweeney-McNary law. This includes the development of forest experiment stations and studies of the properties and uses of forest products by the Forest Service, investigations of tree diseases and the decay of timber by the Bureau of Plant Industry, studies to determine methods of controlling destructive forest insects by the Bureau of Entomology, studies of forest wild life by the Biological Survey, and studies into the relationship between weather conditions and forest fires by the Weather Bureau.

"But we are too prone to assume that the passage of a law automatically brings about the desired result. No law is self-executing. Unless supported by sympathetic public interest, any law quickly becomes inoperative, even though it remains on the statute books. So, having seen the enactment of basic Federal forest legislation, the American public must not assume that the job is done. There is still a long way to go before our timber budget is balanced. There must be increasing annual appropriations and the building up of a larger trained personnel equal to the opportunity for public service. These things are not accomplished without constant effort and watchfulness. A generation ago, our leaders in forestry visioned the time when with a knowledge of how much and what kinds of timber we have, how fast it is now growing and might be made to grow and how fast it is being used up, we might effectively plan our permanent forest supplies. A generation hence we should be far on the road to this goal."

To Oppose Consolidating Paper Cases

ALBANY, N. Y., September 4, 1928.—Traffic manager Joseph A. Quinlan, of the St. Regis Paper Company, has received notice that Earle C. Calhoun, attorney for the New York Central Railroad and representative for all the carriers in rate investigation cases before the Interstate Commerce Commission, has filed a petition asking that the cases of the Harrisville Paper Company and the St. Regis Paper Company be consolidated in the nineteen recently investigated newsprint cases.

The cases of the St. Regis and Harrisville companies were taken up November 21 last at a hearing in Watertown. The hearing was adjourned to December 19 at Washington, D. C., where it was concluded after eleven days during which time 1,975 pages of testimony was taken. The St. Regis hearing is one of the largest ever to come before the commission.

Mr. Quinlan will strenuously oppose the petition to consolidate the cases as he wants them to maintain their identity. They have been fully heard by the commission and briefs were filed March 1, 1928. Mr. Quinlan feels that the cases are entitled to a report instead of being consolidated with the other nineteen complaints comprising the newsprint investigation recently instituted by the Interstate Commerce Commission on its own motion. None of the nineteen complaints have been heard in full or in part and if Mr. Calhoun's petition prevails the Northern New York cases will be treated as though no hearing was held before the commission.

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Edited by
RONALD G. MACDONALD, Secretary

Trend in Development in Steam Turbine Practice*

By Henry Lewis Guy

Of the tendencies affecting the thermal efficiency of steam plants perhaps the most evident is the pronounced movement toward higher steam pressures. Fig. 1 indicates the savings available and shows that these diminish rapidly at higher pressures.

There can be no real justification for such a variety of pressures as 300, 325, 350, 375 and 400 lb. per sq. in., when the maximum difference in possible thermal efficiency of the extremes from 350 lb. is but 1¼ per cent.

It is doubtful whether at present 350 lb. should be adopted for 50-cycle condensing plants having a lower maximum continuous rating than 10,000 kw., or 550 lb. for less than 20,000 kw.

High-Pressure Turbines Exhausting Into Low-Pressure System

The expedient of installing high-pressure turbines exhausting into an existing low-pressure system is already established. The increased generating capacity is obtained with an increased total coal consumption. If the lower pressure plant is not reasonably efficient, the more economic course would be either to reserve it for peak loads or to scrap it and to install new equipment at an intermediate pressure.

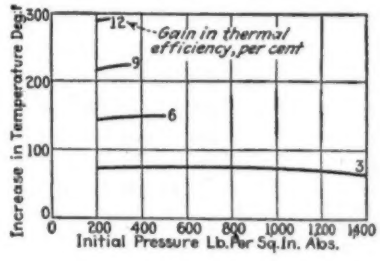

FIG. 1

Gain in efficiency due to increasing initial steam pressure at constant temperature.

Reheating by transfer of heat from steam to steam is attracting attention. If, for example, steam is supplied to a turbine at 525 lb. per sq. in. and 750 deg. F., and if 10.25 per cent is condensed in a steam reheater, the final wetness will be reduced to about 6 per cent, with a maximum thermal gain of about 1.9 per cent. If steam is generated at 850 deg. F. and this additional 100 deg. F. is transferred in a reheater following that just postulated, the maximum thermal gain would be raised to 3.3 per cent and the wetness at exhaust reduced to 3.5 per cent. The thermal gain would be slightly greater with no reheating, but with steam supplied at 850 deg. F. Such a reheating system would be employed, therefore, only on the doubtful assumption that higher-temperature steam can be generated and transmitted than steam turbines can be constructed to employ.

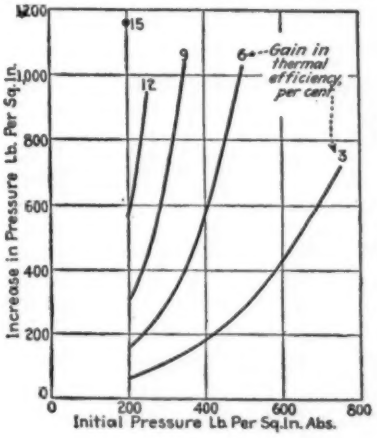

FIG. 2

Gain in efficiency due to increasing initial steam temperature at constant pressure.

Flue-Gas Reheating

There is a decided tendency against reheating by flue gas, at least for pressures below 800 lb. Between 1,000 and 1,500 lb. the disadvantage of flue-gas reheating are minimized and its desirability is increased. The present tendency is to retain flue-gas reheating at such pressures.

Both the advantage and the need of reheating practically disappear if it becomes possible to work at considerably higher temperatures. Thus if 810 deg. F. and 950 deg. F. can be used with initial pressures of 600 and 1,000 lb. per sq. in. respectively, the wetness fraction at exhaust will be the same as with 350 lb. and 700 deg. F.

Unhappily, this recourse of increasing the steam temperature as

* Power—August 7, 1928.

The ratio of stresses at 900 and 700 deg. F. for the same rate of creep is about 0.36. For the same factor of safety, based on the creep limit, a pressure of 350 lb. at 900 deg. F. may be equivalent to a pressure of 1,000 lb. at 700 deg. F., but the higher temperature and lower pressure will yield a thermal efficiency almost 2 per cent higher than the high-pressure and low-temperature condition. In a similar way, 250 lb. at 900 deg. is equivalent to 715 lb. at 700 deg. with an increase of about one-half of one per cent thermal in efficiency.

Although knowledge of creep is not yet extensive or precise, the data used in the foregoing observations are probably accurate enough to justify the conclusion that with equal factors of safety the higher temperature condition will probably give the higher thermal efficiency.

Comparison of Figs. 1 and 2 indicates the relative gains that may be effected by increasing steam pressure with constant temperature. It is evident that much is to be gained through advances in the development of material capable of withstanding higher temperatures.

Regenerative feed-heating has become firmly established. In Great Britain temperatures at the outlets of the feed heaters are being generally raised, and consequently the number of stages is increasing. This is resulting in the addition of air heaters and the retention of the economizer. In some other countries, where elaborations were practiced that were never entertained in Great Britain, the tendency is toward simplification. Feed heaters tend to become fewer, oil and air coolers are being removed from the feed-heating circuit, and economizers show signs of being re-introduced in conjunction with air heaters.

There is a decided tendency to eliminate chemical water treatment and to substitute evaporators, coupled either in parallel with one stage or feed-heating or taking the place of one.

The introduction of feed heaters, evaporators and ejectors introduced a dilemma in the contract definition of performance. It is desirable to give guarantees and to take contract tests with the evaporator cut out or bypassed. The possible systems of stating performance, for given steam conditions and feed temperature, are by steam rate, by heat rate, and by thermal efficiency. The first is perhaps the simplest, whereas the other two will depend upon the steam tables used, and the third also depends on the value adopted for Joule's equivalent. On the other hand, the two latter methods are more closely related to actual coal consumption and have the added advantage that with given variations in steam pressure and temperature and feed temperature, any necessary test corrections are considerably reduced. It is very desirable to reach agreement on the exclusive use of one of these systems.

There is a tendency to return to the system in which the economic rating coincides with the continuous rating, with a much higher rating that may be carried for a short period.

Unfortunately, there is little tendency toward standardization in capacity of units. With interconnection of systems and centralization of control, the necessity for a multitudinous diversity in capacity must surely disappear. The cost of developing a particular size of unit is considerable, and the indefinite multiplication of such charges represents a serious loss. Great advantages would accrue if it could be agreed that one of the following ratings should be standardized for two years for plant extensions: (1) For smaller plants, 20,000 or 25,000 or 30,000 kw. at 3,000 r.p.m. (50-cycle machines) and (2) for the largest stations, 50,000 or 60,000 kw., or larger, at 1,500 r.p.m.

The same would apply if standardization could also be effected for a like period in initial steam pressure and temperature .

To encourage development, some new construction should be deliberately experimental. Stimulated by the example of the purchaser, manufacturers might be induced to pool their resources in order to undertake such experimental plants as a joint effort for the national advantage.

Executives Attention!

Your employees who are members of the Technical Association of the Pulp and Paper Industry are identified with an association which is striving to improve your operation, better your product, lower your costs and in general improve the standing of your industry.

They are all benefitted by contacts with their fellow workers and by the stimulation which comes from interchange of ideas and by keeping abreast of the developments in the industry. You will do them a great service and you will profit greatly by having them in attendance at the Fall Meeting to be held in Wausau, Wisconsin, on September 25th, 26th and 27th.

It is hardly necessary to give the program of papers and entertainment as this will appear shortly in the Journal. Enough to say that this meeting is going to be filled with ideas, with mill visits and with opportunities for contacts and discussions which will send your men back to their work with new interest and enthusiasm.

Make arrangements now to have them go to this meeting as it will be the biggest and best the Association has ever had.

E. C. TUCKER, *President.*

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The Manufacture of Safety Paper

Part 1—Special Paper Structure

By Joseph Rossman[1]

In considering the subject of safety paper it is interesting to note the characteristics of chemical test papers such as litmus, iodo-starch, phenophthalein, etc. These papers are in general sensitive to acids or alkalies or other reagents. A rich source of information concerning indicators is a book by Alfred I. Cohn, entitled "Indicators and Test Papers" (published by John Wiley & Sons, New York). In this connection Cohn describes diphenylamine as an indicator and in U. S. Patent 1,535,862 this same chemical is considered as the active agent in a safety paper.

Safety paper is defined in the recently issued Classification and Definitions of Paper as "a kind of strong writing paper that has been sensitized either by additions of chemicals in the beater or by special printing in a manner to disclose alterations; used for checks, drafts, railroad tickets, premium coupons or any negotiable certificate of value." Over a hundred years ago attempts were made to produce safety paper. An old British patent, No. 4,131, was granted in 1817 entitled "A process or method of manufacturing writing paper in such manner as that it would be extremely difficult, if not impossible, afterwards to extract or discharge any writing from such paper." It describes the process as follows: The pulp is to be prepared in the usual manner of preparing pulp for the manufacture of paper, either with or without a mixture of alum and salt, and when the pulp is in the last state of preparation previous to its being converted into paper, the water in which the pulp has been prepared is to be discharged, and the pulp is then to be immersed in a solution of pure prussiate of potash dissolved in pure or distilled water, in the proportion of one ounce of pure prussiate of potash to two gallons and a half, or thereabouts, of water; and when the pulp has been completely saturated the paper is to be made, sized, and finished in the usual manner. Or paper in the water leaf, after it has been dried, and previously to its being sized, may be immersed in a solution of pure prussiate of potash dissolved in pure or distilled water, in the proportions aforesaid, in which case the paper is to remain in the solution (which ought to be kept warm) until the paper is entirely saturated, after which the paper is to be again pressed and dried, and when perfectly dry to be sized and finished in the usual manner.

Many methods have been suggested for producing safety paper such as by water-marking, introducing coloring-matter either into the pulp or into the paper during its transition from pulp, placing letters and figures couched between two or more layers of formed paper, threads also and filaments couched between layers in the same way. Some methods provide for printing the check or draft upon paper tinted or treated so that the colors shall be fugitive or sensitive to acid or mechanical treatment necessary in making alterations. It has also been suggested to conceal numbers or identifying-characters within the body of the paper, or by covering surface characters with a cemented covering. Attempts have been made to combine fibrous material with paper, and among other plans attempted was that of cutting or chopping the fiber into short lengths and incorporating the same with the body of the pulp; also woven fabrics and prepared sheets of various kinds have been introduced between two sheets of paper and the three caused to adhere to each other; also fiber has been applied to the outside surface of a paper sheet, and straight continuous lines of fiber-threads have been introduced into a paper sheet.

Classification of Safety Papers

Safety paper can be grouped into three classes. One class involves a peculiarity in the structure of the paper, such as the incorporating in it of threads, or the like, which will disclose at once, by the destruction of the fiber, any attempt to alter superficial writing by erasure or any action tantamount to erasure. A second class involves the preparation of the surface of the paper either by the employment of a color, glaze or enamel or similar material, so that any attempt to remove the superficial marks thereon will result in the removal of a part of the superficial safety application. A third class involves such a composition of the paper itself that an attempt to act upon superficial marks thereon with a chemical factor, such as chloride of lime, oxalic acid, tartaric acid, etc., will produce a marked change in the color of the paper at the point where the chemical re-agent is applied, thus giving evidence at once of the attempt to remove the mark from the surface.

The following abstracts of U. S. patents deal with the production of safety paper by the incorporation of the materials during the paper making. A separate survey will be made for the methods of producing safety paper in which the finished paper is treated by impregnation or coating.

1. Varnham, 4,143. August 9, 1845

The combination of a colored sheet of test-paper and one or more plain white or lighter or darker or different-colored sheets or surfaces of paper applied to one or both sides of the test-sheet.

The object is to protect the test or colored sheet from being tampered with by chemical agents employed to obliterate writings, and to prevent the using of any sharp instrument or rubbers for scraping or erasing writing, as should any chemical agent be employed, the test or colored sheet would be so changed as to alter conspicuously the former appearance of the paper, and the white or delicate sheet or sheets, surface or surfaces, would likewise be imbued with a stain or color produced by the action of those chemical agents on and thence from the color of the test-sheet.

2. Howell, 28,370. May 22, 1860

The invention relates to the means of preventing the counterfeiting of bank-notes and other paper securities; and consists mainly in the application between the laminae of thin paper of a colorless metal, either in foil or powder, to designate the character or denomination of such particular bill, note, or other security.

3. Hayward, 34,634. March 11, 1862

This invention consists in the employment of continuous lines of fibrous material as a means of designating the denomination or character of a note, coupon, etc., the paper being made in a single sheet, and the threads introduced while in the pulpy state, and worked into and among the fibers of the paper stock, so that they cannot be detached or withdrawn without destroying the paper or surface thereof. The threads or fibrous lines may be of different color or kinds, to designate varieties in the value or character of the sheet. Bright metallic or other particles may also be caused to adhere to the threads, and introduced within the substance of paper, in such condition that they shall permanently change their appearance with any attempt to remove the ink from the sheet.

4. Loewenberg, 53,081. March 6, 1866

The use of prussiate of potash and oxalic acid, or such other alkaline salts or acids, in or on the paper to be used for writing or printing or both, so that when any attempt is made by the use of any chemical agents to remove such writing or printing, or both, the paper will perceptibly change its color, but the writing will be more affixed to the paper.

5. Willcox, 56,650. July 24, 1866

The pulp of the paper is prepared in the ordinary manner, and then there is distributed among this pulp during the stage of its transformation into paper, or while the same passes over the wire-cloth or wire, colored fibers or shreds of any suitable material

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different from the ordinary fibers of the paper in color, texture, or otherwise.

By these means the additional fibers are embodied into the paper or interwoven with the ordinary fibers thereof, and they cannot be embodied in a similar manner in the paper except during its process of transformation, so that an imitation of the sheets is almost impossible; and by producing sheets with one or more lines or stripes running lengthwise different denominations of bank-notes or bonds can be indicated, and the alteration of one denomination to another is effectually prevented.

6. Shaffner, 59,281. October 30, 1866

The manufacturing of paper by placing upon an inner surface thereof a coating of dissolved india-rubber or caoutchouc, either mixed or unmixed with metallic powder, or by spreading the powder over the surface of the india-rubber coating, contemplating the covering of said metallized surface with a film of paper woven thereon from pulp, or by pressing another sheet of paper in such manner as will unite the whole practically as one body of paper.

7. Crane, 61,321. January 22, 1867

This invention consists in inserting in the paper pulp and incorporating with it, during the process of manufacturing the paper, one or more threads or strips of gutta percha or other material which will soften under the heat of the drying-cylinder of the paper-making machine and become inseparably united with the paper so as to be incapable of being removed or detached without destroying the latter.

8. Thomae, 101,786. April 12, 1870

The invention consists in the introduction in or combination with the pulp or mash of which the paper is to be made, of aniline or other coloring-matter or dye, which is fugitive on the application of any solution which will remove the various inks or writing-fluids ordinarily used.

9. Willcox, 115,005. May 16, 1871

The paper is colored or tinted with two or more coloring or tinting substances, of which at least one color or tint is differently sensitive to some chemicals from one or more of the outer coloring or tinting substances. The coloring or tinting substances are applied by saturating the paper with them, or by coloring or tinting its surface, or (which is preferable) by mixing them with the paper pulp before making it into paper. If desired, one or more of the colors or tints may be in the body of the paper and one or more upon its surface. For example, if the tint is made by combining in the paper-pulp a red color that is sensitive to acids and alkalies, and scarcely at all sensitive to aqua ammonia, and a blue color that is not sensitive to acids, but is sensitive to alkalies and ammonia and differently sensitive to each, and the paper thus prepared is subjected to acid, alkalies, or ammonia to discharge a figure, letter, or work to effect a fraud, or is subjected to any other chemical agent likely to be used for such a purpose, the original tint of the paper will be changed so as to betray the attempt.

10. Casilear, 167,223. August 31, 1875

A safety-paper having embedded in its face side a woven fabric or warp, in such manner that both the paper stock and embedded fabric or warp shall lie, practically, in the same plane, exposed to view, and be capable of separation. The paper thus prepared with a textile-fabric face or upper surface may be readily printed upon either by type or plate, and may also be written upon with a pen; and any effort made to erase any of the printing or writing from the face of the paper by the use of a knife will necessarily result in the destruction of the lace-work or fabric-covering.

11. Syms, 177,896. May 23, 1876

The process of manufacturing safety-paper, which consists in applying the coloring material directly to but a portion of the surface of the pulp web before pressing or calendering, whereby the coloring material is permitted to partially penetrate and spread in the pulp web, clouding or irregularly coloring its surface.

12. Brooks, 202,515. April 16, 1878

A blank for checks or other evidences of value containing one or more distinguishing numbers or other characters incorporated within its body in the process of manufacturing the paper, and concealed from view by a suitable design printed on the blank opposite the place where the distinguishing-mark is applied, said paper being also coated or impregnated with chemical or coloring matter of such a character as to change on the application of chemicals or moisture.

13. Brooks, 210,089. November 19, 1878

A bank-check, draft, or other evidence of value printed or formed upon paper having at one or more localities, between the layers of pulp of which the paper is formed, a concealed incorporated piece or film of carbon-paper or other coloring matter or metal foil capable of receiving or transferring impressions made exteriorly.

14. Casilear, 210,497. December 3, 1878

The process of making paper of two or more distinctive colors, by using different coloring-matter in separate compartments of paper-pulp, which is afterward united in one continuous sheet side by side.

15. Anderson, 211,207. January 7, 1879

In the manufacture of paper, the process of embedding fibers in the pulp, raising the ends of the same from the rolled sheet in the form of an upright nap, brushing the fiber ends down in different directions in a confused manner, and sizing the surface thus formed.

16. Hayward, 225,279. March 9, 1880

A safety-paper made by introducing into the pulp, during the process of manufacturing the paper, one or more threads or strands of silk or other fiber, placing the same in a fixed and definite position, preferably at or near the top of the note, the thread or strand being previously printed or colored at one or more points in its length to indicate the value of the note, one colored space indicating one dollar, two spaces two dollars, and so on.

17. Heckmann, 225,282. March 9, 1880

The process of preparing detective-paper by placing in the finishing-size prussiate of potash and sulphuret of ammonia.

18. Hayward, 226,660. April 20, 1880

The method of manufacturing paper, consisting in producing a sheet or layer of pulp, applying a continuous webbing of crossed and tangled fiber thereon, and finally applying a second layer or film of pulp upon the fiber and uniting the whole in one sheet.

19. Dupre and Hehner, 246,100. August 23, 1881

Paper treated with a protective mixture comprising metallic sulphide or sulphides, in combination with metallic salt or salts, and which, when acted upon by dilute or weak acid, or by an alkali, or by cyanide of an alkali, will produce on or in the paper a stain or dark mark or marks not removable by means of dilute acid, or by alkaline sulphide, thus indicating any attempt to fraudulently alter writing or printing contained on such paper.

20. Musil, 282,106. July 31, 1883

A fiber ingredient for admixture with the paper-pulp in the vat for the manufacture of a paper for value-papers, bank-notes, bonds, etc., the described fiber containing albumen and treated with diluted nitric acid, and whereby, with the paper fabricated from such mixture, the taking off of a clear picture by way of photography, and the further preparation of a suitable printing-plate from such photographic copy will be rendered impossible.

21. Menzies, 302,758. July 29, 1884

There is added to the paper at any convenient stage in the manufacture a mixture of iodide and iodate of potassium, starch, and carbonate or sulphate of manganese, and carbonate or sulphate of lead. The proportions of these agents may be varied. For example, potassium iodide, three-fourths of one per cent in finished paper; starch, one per cent in finished paper; sulphate or carbonate of manganese, two per cent in finished paper; carbonate or sulphate of lead, two per cent in finished paper.

22. JONES, 307,956. NOVEMBER 11, 1884

The invention consists in the manufacture of paper for bank-notes, bonds, and other securities, by combining a sufficient quantity of asbestos to prevent the entire destruction of the paper by fire, with palmetto, hemp, or its equivalent, having long fiber to impart greater strength. The second part of the invention consists in the manufacture of paper with the denomination of the note or other security designated by means of silk fiber of different colors introduced within the body of the paper in the course of manufacture.

23. SCHREIBER, 322,131. JULY 14, 1885

The process of producing safety-paper, wherein the paper material or the finished paper is treated with ferric-oxide salts and with ferro-cyanides insoluble in water but soluble in acids—such as ferro-cyanide of lead or the like on the one hand, or ferric-oxide saccharate and ferro-cyanides soluble in water on the other hand—the paper being afterward treated with indigo or acid fuchsine.

24. HILL, 330,894. NOVEMBER 24, 1885

A mixture of ferro-cyanide of manganese and hydrated peroxide of iron are mixed with the pulp of the paper, or the mixture is put partly in the pulp and partly in the sizing of the paper. The ferro-cyanide of manganese is turned blue by most acids and brown by caustic alkalies, so that an attempt to alter the writing or change the paper by chemical action produces discolorations in and on the paper.

25. SCHLUMBERGER, 443,116. DECEMBER 23, 1890

A white safety-paper impregnated with a resinated ferrous salt, a resin compound of plumbic ferro-cyanide, and a resin compound of ferro-cyanide of manganese, in combination with a salt of molybdenum and a resin of zinc sulphide.

26. MACDONOUGH, 447,336. MARCH 3, 1891

A distinctive paper for bonds, notes, checks, or other securities, consisting of a sheet of paper having incorporated therein a multiplicity of planchets of a color differing from said sheet.

27. SCHLUMBERGER, 491,858. FEBRUARY 14, 1893

The process which consists in dyeing splash-fibers with indigo, then mixing them with paper-pulp and making paper from the resulting mixture, then applying to a portion of the paper a solution of citric acid and alum to remove the dye from the splash-fibers and finally rinsing the paper.

28. HOSKINS AND WEIS, 511,271. DECEMBER 19, 1893

A safety paper having added thereto a ferro-cyanide soluble in water, a per-salt of iron insoluble in water but easily decomposed by weak acids in the presence of a ferro-cyanide soluble in water, and a salt of manganese easily decomposed by alkalies or bleaching agents.

29. GERNAERT, 964,014. JULY 12, 1910

A process of forming paper that cannot be imitated, which consists in providing, on an endless machine, a layer of paper pulp, placing thereon, at predetermined intervals a plurality of very thin and ductile printed and perforated bands of colored or colorless paper, superposing mechanically a second layer of paper pulp, upon the first layer and upon said bands, and causing the pulp to pass between the perforations so to produce a homogeneous whole body, cutting the paper so formed, into sheets, each of which will contain an identical portion, with identical configurations, printings and perforations, and will occupy the same relative position, and finally printing on one or both faces of the paper so produced, all kinds of figures which must exactly join with the printings and perforations of the inner bands.

30. MENZIES AND AITKEN, 1,086,386. FEBRUARY 10, 1914

According to the invention, there is incorporated in the paper pulp, or the partially or completely manufactured paper is impregnated with, a soluble thiocyanate, preferably thiocyanate of ammonium, and a soluble salt of lead, desirably in such proportions that the insoluble thiocyanate of lead produced by the combination, will amount to 5 to 20 per cent of the weight of the paper more or less; or there may be added directly to the pulp or paper thiocyanate of lead, desirably in the proportion of 5 to 20 per cent of the weight of the paper more or less.

31. WEIS, 1,172,414. FEBRUARY 22, 1916

The pulp of the paper is prepared in any usual or suitable way. A mixture of a soluble ferro-cyanid and an anilin or an anilin salt such as anilin chlorid is then introduced into the pulp in the proportion of about one-half per cent of soluble ferrocyanid, and one per cent of anilin or anilin salt, to ninety-eight and one-half per cent of pulp. The anilin or anilin salt being white or colorless does not color the paper. Instead of introducing this mixture into the pulp it may be incorporated with or added to the sizing which is applied to the paper. This process gives a safety paper containing iron and anilin or a white or colorless anilin salt, capable of producing blue and brown stains on the paper when treated with acid and bleaching agents. Where an attempt is made to change or obliterate a mark, or to remove it from the surface of such a paper, acid is first employed for the purpose of softening the ink, after which a bleaching compound is used such as chlorid of lime or similar chlorin compound. The soluble ferrocyanid acts to fix the ink when it is first applied to the paper. If acid is applied to the surface of the paper for the purpose of softening the ink, a reaction takes place between the soluble ferrocyanid and the persalt of iron, which causes a blue stain upon the paper. This blue stain is produced by the formation of Prussian blue. The anilin or anilin salt is introduced for the purpose of causing a brown stain in the paper when the bleaching agent, such as chlorid of lime or any other agent the active principle of which is chloring, is applied to the paper. This brown stain results from the compounds formed by the combination of anilin and chlorin. The presence of the salt of manganese aids in the production of the brown stain. When it is subjected to the action of the chlorin in the bleaching agent, it is oxidized and also forms a brown stain. It is better to use an insoluble salt of manganese such, for example, as manganese ferro-cyanid or a manganese phosphate.

32. HARPER, 1,281,951. OCTOBER 15, 1918

The invention consists in applying coloring material to the pulpy paper web, during the manufacturing process and while such web is in a moist condition, but not until a considerable amount of the water has been extracted therefrom, such coloring material being applied without compressing the web or disturbing its fibers, and being of a nature which insures penetration of the web structure uniformly and evenly, that is, without running or spreading in said structure, so that the integrity of the color design is maintained beneath the surface upon which such design is impressed, as well as on such surface, whereby a paper is produced that has therein a distinct color design or a color body having depth and area.

33. SAMMET, 1,535,861. APRIL 28, 1925

The process of making safety paper which consists in adding to the paper benzidine sulphate in substantially the following proportions—100 parts by weight of pulp to 5 parts by weight of benzidine salt.

34. SAMMET, 1,535,862. APRIL 28, 1925

The essential feature of the invention consists in the incorporation therewith at any desirable stage in the manufacture of the paper, of a member of the diphenylamin group, such as diphenylamin or its homologues, substitution products, derivatives or salts. The following proportions give the best results, viz.: 100 parts by weight of pulp to 5 parts of the diphenylamin salt. The substances of the class named, and especially those substances mentioned, are discolored upon treatment with ink eradicators, which usually contain oxidizing agents, the change being due to the oxidizing effect of the eradicator, although other ingredients thereof may also produce a color change in the safety material. A dirty brown spot is usually produced upon the paper with which they are in contact, which spot cannot be obliterated by treatment with acids, alkalies, reducing agents or other chemicals.

35. CONE, 1,584,850. MAY 18, 1926

The process of making a safety paper by incorporating in the pulp mercurous sulphanilate and impregnating the paper with

sulphanilic acid or a soluble salt of sulphanilic acid. A paper thus made with mercurous sulphanilate will develop with alkalies a brown or black color; with chlorine or hypochlorites a brownish-red color develops; with thiosulphate (hyposulphite), sulphite, bisulphite, or ammonia, a brownish to black color will develop; if an iodide solution is applied to the paper in an attempt to wash out any contained chemicals, the mercury sulphanilate will produce a yellow to black discoloration.

Determination of Opacity of Paper

TAPPI Official Method

I. Apparatus

The essential principle of the contrast method of determining the opacity of paper, herein specified, is as follows: When translucent paper is placed over a white surface, the luminosity observed is that of the light reflected from the paper plus that which is reflected from the white surface underneath. When paper is placed on a perfectly black surface the luminosity is that of the light reflected from the paper only, as the transmitted light has been absorbed by the black background. The ratio between these two luminosities, determined by means of a photometer, represents therefore the opacity of the paper, this being 100 per cent for perfectly opaque paper and zero for perfectly transparent paper. The apparatus shall consist of a light chamber, a photometer, a standard white surface, a standard black surface and a test-specimen holder. A particular design of light chamber or box is not essential. It is essential that the light box be so designed that the test surface of the specimen is illuminated evenly from all directions, and that the illumination over the black and the white standard surfaces be equal. The apparatus must be so designed that only the light reflected from the surfaces of the paper covering the black and white standards can enter the photometer. The white standard surface must not touch the surface of the test specimen but must be so near it that a further decrease in distance will not affect the test results. (In the instrument mentioned below less than 2 mm. was found suitable.) The white standard shall consist of a block of chemically pure magnesium carbonate of high reflecting power. The surface used shall be smooth and plane, and shall be covered with a thin (1 mm. or less thick), clear and colorless glass disk. The black standard shall consist of a box or cavity of such depth and lined with such material that all light entering the cavity will be absorbed. The box may be lined with black plush, or smoked with acetylene or other soot. A specified make or design of photometer is not essential, but a Martens photometer or similar type is preferred. Both halves of the photometric field shall be perfectly uniform in brightness over their entire surfaces, and, when matched, the dividing line shall disappear along its entire length simultaneously. The specimen holder shall be so constructed that the sample is held perfectly flat; otherwise the photometric field will not be uniform and the precision of setting will be poor. The apparatus shall be capable of giving results reproducible within 1 per cent for nearly opaque papers and within 2 per cent for nearly transparent papers. A suitable type of apparatus is described in the Bureau of Standards publication mentioned under *References*.

II. Calibration

The requirement that the black and white areas must receive equal illumination is tested as follows:

Both areas are covered with a uniform, opaque, mat, white material. The photometer is turned so that one-half of the field is illuminated by light from the part of the material over the black standard, while the other half is illuminated by the light from the part over the white standard. The two halves of the photometric field must then show even illumination. In using a Martens type of photometer the fields are matched and the whole photometer is then rotated about its optic axis through 180 degrees. If the two halves of the field are still matched, the condition of equal illumination is satisfied.

III. Test Specimen

Specimens for test shall consist of not less than three pieces of paper so selected as to be representative of a test sample secured by the official sampling method, and shall be of sufficient size to fit the sample holder and completely cover the standard test surfaces. They shall be kept perfectly clean and free from folds and wrinkles; and the areas to be tested shall not be touched with the fingers.

IV. Procedure

Not less than three representative test specimens shall be tested in the following manner: One of the test specimens shall be placed in the specimen holder which shall then be placed in position in the apparatus so that the test specimen covers the black and the white standard test areas. The observer shall then match for brightness the two halves of the photometric field. Not less than 12 observations shall be made. Following is the procedure if the Martens type of photometer is used: The observer shall first match the two halves of the photometric field, using the scale interval between 0 and 45 degrees. A second or check observation shall then be made, and the two observations recorded. The whole photometer shall now be rotated through 180 degrees, and two more observations shall be made as before, using the scale interval between 45 and 90 degrees. After these four observations have been made and recorded, the test specimen shall be removed and a second specimen shall be placed in position, and four more observations made and recorded as before. The second specimen shall then be removed and a third substituted and tested as before. The twelve readings shall be recorded and computed as in the following example. The readings for the three specimens are in consecutive numerical order, Nos. 1 to 4, inclusive, being for one specimen, Nos. 5 to 8 for another, and 9 to 12 for the third.

	α_1		α_2
1	34.6°	3	55.4°
2	34.8	4	55.2
5	34.5	7	55.4
6	34.6	8	55.5
9	34.4	11	55.6
10	34.5	12	55.4
Means	34°—34′		55°—25′

$\tan \alpha_1 = 0.6890$, $\cot \alpha_2 = 0.6894$

Contrast ratio $= \tan \alpha_1 \times \cot \alpha_2 = 0.475 = 47.5\%$ opacity.

V. Report

The results shall be reported in per cent opacity to one decimal place. The average maximum and minimum opacity shall be reported.

VI. Additional Information

REFERENCES

"A Measurement of the Translucency of Paper," U. S. Dept. of Agriculture, Bureau of Chemistry Circular No. 96; Paper 7, No. 7, 22 (May 1, 1912).

"Specification of the Transparency of Paper and Tracing Cloth," Bureau of Standards Circular No. 63. Copies of these publications may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5 cents (cash) per copy.

TAPPI Fall Meeting Technical Program

About twenty-five technical papers will be presented at the Wausau meeting of the Technical Association of the Pulp and Paper Industry on September 25, 26 and 27, 1928.

Although this is an unusually large number of papers for a Fall Meeting of TAPPI, it will be run on a time schedule as indicated below and will not interfere with the elaborate program of mill visits, recreational activities and banquets that is being prepared.

The papers will be presented in symposiums so that all of the contributions to a major subject will be grouped together and the discussion may center on the papers as read or on the general subject being considered.

Forest Products Laboratory Symposium

The Tuesday afternoon symposium will be conducted by C. C. Heritage and the members of the staff of the Forest Products Laboratory and will consist of the presentation of papers relating to the important projects now in operation in the Madison Laboratory. As a result of this symposium those in attendance at the meeting will have an opportunity to decide upon which laboratory procedure they desire to see carried out during the "open house" program of the laboratory on Friday and Saturday, September 28 and 29, to which all who attend the TAPPI meeting are invited.

Waste

The Wednesday morning symposium will be conducted by Dr. H. L. Joachim, of the Container Corporation, of Philadelphia, and the TAPPI Committee on Waste and Corrosion Problems. In this meeting a group of papers will be presented relating to the subject of white water and stock losses in the paper mill.

Mill Control

The Thursday morning symposium deals with the general subject of technical control in pulp and paper mills and covers this subject with particular attention to chemical pulp and paper board mills.

Other Papers

In addition to the contributions to the group subjects several papers will be presented covering other engineering and production topics. Among the most interesting of these is a paper by E. V. Hulbert, chief engineer of the Cornstalk Products Company, of Danville, Illinois, who will outline the present status of the subject of cornstalk pulping. It is expected that Bela Dorner, of Hungary, the inventor of the process, Richard Glassner, Maximilian Schiffer and others interested in the development of the process, will attend the meeting.

S. R. Olsen and R. A. Gortner will outline their findings as a result of studying the subject of rosin sizing of paper at the University of Minnesota.

Late September Weather at Wausau

Although the subject of weather is discussed when there is little else to talk about, it is not amiss to recommend to TAPPI members planning to attend the meeting at Wausau to be prepared for very cool weather.

Final Program of Tappi Fall Meeting

TUESDAY, SEPTEMBER 25

8:00 a.m. Registration at Elks' Club (all day).
9:30 General Session: Reports of Standing Committees.
11:20 Utilization of Cornstalks for Pulp by E. F. Hulbert, Chief Engineer, Cornstalk Products Co., Danville, Ill.
12:30 p.m. Lunch at Hotel Wausau (ladies included).
1:30 Forest Products Laboratory Symposium.

A. *Fundamental Research*—
Section Chief C. C. Heritage

1:40 The Determination of Opacity Using the Ives Tint Photometer Particularly Relative to News Print—R. H. Doughty.
1:50 The Microstructure of a Wood Pulp Fiber—G. J. Ritter.
The Significance of Fiber Microstructure in Chemical Pulping—G. J. Ritter and G. H. Chidester.
2:40 Methods of Analyses Used at the Forest Products Laboratory for Pulps and Pulpwoods—M. W. Bray.
2:50 Tentative Forest Products Laboratory Method of Recording and Evaluating the Quality of Pulpwood—C. C. Heritage and W. H. Monsson.
3:00 The Bleaching of Wood Pulp—P. K. Baird.
3:10 The Effect of Temperature on the Rate of Hydrolysis of Spruce Wood with Sodium Hydroxide—M. W. Bray.
3:20 The Effect of Varying the Time and Temperature of Impregnation on the Yield and Quality of Sulphite Pulp from Eastern Hemlock—W. H. Monsson and G. H. Chidester.

B. *Applied Research and Development*—
Section Chief C. C. Heritage

3:40 The Utilization of the Hardwoods for Pulp and Paper—C. E. Curran.
3:50 Preliminary Study of a Semi Sulphite Pulping Process by C. C. Heritage, C. E. Curran, W. H. Monsson and G. H. Chidester.
4:00 Recent Experiments in the Utilization of Mill Waste by Semi-Chemical Pulping—C. E. Curran.
4:10 Pulping Flax Straw—E. R. Schafer and C. E. Peterson.
4:20 Dinner, entertainment and dance at Elks' Club (ladies included).

WEDNESDAY, SEPTEMBER 26

9:00 a.m. Introduction by Chairman H. L. Joachim, Container Corporation, Philadelphia, Pa.
9:20 Control of Stock Losses in the Paper Mill—A. T. Gardner, Combined Locks Paper Co., Combined Locks, Wis.
9:40 Surveying the Mill for Whitewater Losses—E. R. Schafer, Forest Products Laboratory, Madison, Wis.
10:00 Whitewater Re-Use—L. M. Booth, Booth Chemical Co., Elizabeth, N. J.
10:20 Sanitary Analysis in the Pulp and Paper Industry—W. F. Warrick, State Sanitary Engineer, State Board of Health, Madison, Wis.
10:40 The Rosin Sizing of Paper—S. R. Olsen and R. A. Gortner.
11:00 Improving Paper Drying by Atmospheric Control—R. Skagerberg, Consulting Engineer, St. Paul, Minn.
11:20 Application of Piping Materials in the Paper Industry by T. H. Ireland, Crane Co., New York, N. Y.
12:00 p.m. Cars leave Elks' Club for Wausau Country Club.
12:30 Buffet Luncheon at Wausau Country Club (ladies included).
1:30 Automobiles leave for visit to Marathon Paper Mills Company, Rothschild; Mosinee Paper Mills Company, Mosinee; Return to Country Club, Alexander Airport or Hotel Wausau as desired.
Golfers will remain at Country Club to play for the D. J. Murray trophy.
Those who wish to take an airplane ride will be taken to Alexander Airport between 3:30 and 5:00 p.m.
7:00 Past Presidents' Dinner at Elks' Club (special program).

Award of the TAPPI Gold Medals.
Ladies will dine at Wausau Club, followed by a special movie party.

THURSDAY, SEPTEMBER 27
Technical Control Symposium

9:00 a.m. Technical Control for Paperboard Mills—E. F. Whittington, Chief Chemist, Sutherland Paper Co., Kalamazoo, Mich.
9:20 A Mill Scale Demonstration of Sulphite Pulping Control—G. H. Chidester, Forest Products Laboratory.
9:40 Technical Control in the Soda Pulp Mill—E. S. Hinman, P. H. Glatfelter Co., Spring Grove, Pa.
10:00 Alkaline Pulp Mill Control Methods—C. K. Textor, Northwest Paper Co., Cloquet, Minn.
10:20 Use of the Bronze Rod Mill for Pulp Strength Testing—W. F. Moore, U. S. Testing Co., New York, N. Y.
10:40 A Rotating Disk Machine for Measuring Pulp Color—C. G. Landes, Mead Fibre Co., Kingsport, Tenn.
11:00 Application of Meters and Instruments to the Pulp and Paper Industry—R. V. Knapp, Bailey Meter Co., Chicago, Ill.
11:20 Standard Control Apparatus in the Paper Industry—R. T. Kurtzing, Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.
12:15 p.m. Lunch at Elks' Club (ladies included).
1:00 Autos leave Elks' Club for visits to D. J. Murray Mfg. Company, Wausau; Wausau Paper Mills, Brokaw; Wausau Pail & Carton Division, Marathon Paper Mills.
3:00 Autos leave Elks' Club for Rothchild Park (ladies included).
4:00 "North Woods" outdoor program, including log rolling, Indian dances, lumbermen's songs, landing human fish, and boxing.
5:30 Supper in Rothchild Pavilion.
6:30 Paper Making Up To Date.
7:00 Autos leave for Hotel Wausau.
8:50 Leave C., M., St. P. & P. Depot for Wisconsin Rapids, Madison, Chicago, or Minneapolis.

New Bronze Valve

Jenkins Bros., valve manufacturer, announces a new line of bronze valve with renewable resilient disc for 250 pounds steam working pressures. The disc, being more resilient than the metal, readily conforms to the seat, and insures a tight valve without regrinding.

The line comprises globe, angle, cross and horizontal and angle check patterns furnished screwed or flanged in sizes ranging from ¼ inch to 2 inch. The globe, angle and cross patterns are furnished with renewable seat rings. The bonnet screws over the body, a construction which adds strength. The bonnet seat joint is rounded, a feature which also provides strength and at the same time allows easy removal of the bonnet.

Other features of the globe, angle and cross patterns include: non-heat hand wheel of malleable iron; bronze gland which aids in preventing leakage around the spindle; deep stuffing box generously packed with asbestos ring packing; and manganese bronze spindle with large, powerful threads, all of which are in contact with bonnet threads when valve is closed.

Oysters Thrive on Sulphite Waste Liquor

A report prepared by Professor H. K. Benson and Robert Benson, of the University of Washington, relative to the effect of the presence of sulphite waste liquor in the stream below a pulp mill. They found the standard of living of the oysters in this river to be high, as the acid waste of the mill appeared to combine with the water and its other contents and was very beneficial to the bivalves.

Pycnograph

The Hays Corporation of Michigan City, Ind., has recently perfected a continuous specific gravity recorder called a pycnograph.

It is capable of giving a record of the gravity of sulphite cooking liquor, waste liquor, sulphate cooking liquor, and black liquor, glue solutions for tub sizing and of any other liquids for which a continuous record of the gravity would assist in controlling the operation of the processes.

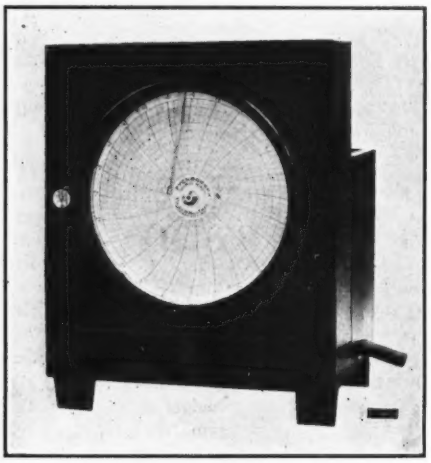

FIG. 1

Fig. (1) shows a view of the front of the machine. Fig. (2) shows a view of the balance chamber removed from the clock case. You will see that the balance chamber is separate from the clock case whereby fumes from the acid are prevented from interfering with the clock movement.

The pipe conveying the acid to the glass bulb and the trough carrying it away, therefrom, are made of acid proof material. The glass bulb, of course, is also not affected by the acid and on account of being transparent its condition at any time can be readily seen. Stainless steel is used for the chamber walls so that there is no corrosion from the fumes or vapor.

The cover of the balance chamber may be removed without breaking any pipe connection. The scale of this instrument is from 0 to 10 Bé. The instrument could be simply adjusted for any other scale or range by moving the weights on the balance. The workmanship is of the best and of the same quality as the Hays CO_2 recorders and other instruments made by the Hays Corporation.

The price for the instrument made specially to handle sulphite liquors, is $200 f.o.b. Michigan City, Indiana. Delivery can be made 30 days after receipt of order.

Inspect New Plants at Oswego

OSWEGO, N. Y., September 4, 1928.—Officials of the St. Regis Paper Company were hosts this week to the second large party of visitors to come here recently to inspect the new plants of the Taggart-Oswego Paper and Bag Corporation, and the Oswego Bag Corporation. The party included thirty men representing the Buffalo investment banking firm of Schoellkopf, Hutton & Pomeroy, and the Niagara, Lockport & Ontario Power Company. The party inspected the bag and paper mills and the new power plant completed recently. After a stay of several hours here the visitors were taken by special bus to Watertown where they were the guests of John N. Carlisle at a dinner at the Black River Valley Club. The party later visited the St. Regis paper plants along the Black River.

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Understanding Budget Preparation*

By C. Y. Colgan

It is the purpose of this article to restate the fundamentals of budget preparation and control rather than to outline reasons for installing a budget system. Most companies, large and small, have realized the necessity of a budget and are willing to testify in favor of its use. But in observing the practical operation of a budget by many corporations, one is impressed with an apparent misunderstanding, by those most interested, of the use of certain terms in the assembling of figures. For example, one frequently reads articles on the subject of budget which are seemingly paradoxical. Consequently confusion often exists between the members of the accounting department and the operating or financial executives. One such statement is worded as follows:

"The real underlying basis for budget control is the undeniable fact that a sale is not a sale until the account has actually been paid in cash."

Compare this strictly cash picture with the following statement taken from the same article.

"The budget should operate so that the executives of the company could withdraw from the business at any time and know exactly what money they could take with them. They should know that no unexpected obligations could arise which would call for the return of part of that money. It is not enough that the budget serve as a means of determining the present status of a business——it must actually insure profits."

In the last quotation one observes that unexpected obligations and profits must include unpaid bills or obligations. The result is an accrual basis and not a cash basis.

If an accounting department attempted literally to follow a strictly cash basis in assembling expenditures, the treasurer would be apt to be misled, as certain bills payable would be omitted from the figures and he would not have the so-called "Cash surplus" entirely free to disburse for additions to plant, dividends, etc. Furthermore, to exclude bills payable would confuse the operating executives when they attempted to match expenditures against their original estimate (budget), as it is conceded and understood that an operating executive estimates the budget at the beginning of the year without consideration of the actual date of disbursements or receipts.

Between these two groups of executives (operating and financial) we find the accounting department confused because of the misuse of terms on the one hand and the lack of knowledge as to what is required on the other. To maintain a budget which can be analyzed monthly or quarterly and can be controlled by the books, and at the same time serve the operating and financial executives there must be a basic formula and a clear understanding by all concerned of the proper use of terms. This result can only be attained by proper internal corporate education so that everyone may converse in the same language.

Terminology

The term "Cash basis" is of interest only to the treasurer and should have no place in the original budget prepared at the beginning of each year. Monthly or quarterly statements should be prepared, showing actual receipts and expenditures taken from the books on an accrual basis and converted to a cash basis by reconciliation if necessary. In some businesses this conversion would not be necessary as the amount of unpaid liabilities and uncollected receipts carried over from the previous month practically balances with similar items in the current month carried over to the subsequent month. Statements thus prepared can be controlled by the books, and unsettled receivables and payables may be shown as a footnote to guide the treasurer in his use of the figures.

"Accrual basis" is a term of interest both to operating executives and to the accounting department. It is the formula on which the budget is originally prepared by the operating executive and is the basic formula for all corporate accounting records. Statements of expenditure and revenue taken from the books monthly or quarterly are comparable with the budget for the same period and also form the basis of profit-and-loss calculations by the treasurer, after taking into consideration depreciation and other book "Write-offs" which have no part in the budget program.

The item of bills or accounts payable represents liabilities incurred for which the company is responsible and makes entry during the current month, although the treasurer does not actually pay them until the subsequent month. While payment is not made until the subsequent month, the treasurer must reserve a portion of his surplus cash to meet these obligations, or if necessary, borrow funds for the purpose. If it is necessary to borrow, the treasurer should have as much advance notice as possible.

"Bills or accounts receivable" represents sales entered on the books in the current month for which the treasurer will not receive cash until subsequent months. This item is of interest only to the treasurer who must have foreknowledge concerning credits and collections. In businesses where credits are granted for long terms, such as three or six months, the treasurer must frequently arrange for outside financing.

The term "commitments" is applied principally to capital expenditures which frequently involve large items for which the company is committed as soon as executive authority is granted for proceeding with the work involved, even though actual payments may be spread over the entire period of construction. Fig-

* The Journal of Accountancy, August, 1928.

ures to which this term applies are not taken directly from the books of account but are usually gathered from supplemental records. They are used by the operating executives to determine the maximum limit of present activity as compared with the budget, which reflects the danger line beyond which they can not go, and by the treasurer for exercising control over the operating executives to keep them from over-spending their allotment and thus impairing or embarrassing the treasury.

Budget is the word that represents the foundation stone of the entire structure. The budget is prepared annually at the beginning of each year (calendar or fiscal as preferred) and usually is sub-divided on a quarterly basis for convenience. The budget should be revised monthly and/or quarterly, such revisions being governed by unforeseen fluctuations. In some businesses, one can readily understand, revision is unnecessary, while in other cases, such as oil producing, mining, etc., it is essential because of new discoveries, offset drilling and similar factors. If revisions were not made, the operating executives as well as the treasurer would be attempting to guide the business from their various stations of authority by an erroneous chart, leading to disastrous results by the close of the year. Receipts and expenditures by periods (taken from the books on an accrual basis) are matched with the budget in order to determine the progress of the company. Division by departments should be arranged where a company is so sub-divided. If the departmental division is justified but not made, one or more departments may operate at a loss even though the company as a whole shows a profit. The figures gathered represent gross anticipated expenditures and revenue and should portray the following:

Revenue	$000,000
Less: Operating expenses and overhead	$000,000
Balance available for capital expenditures and dividends	$000,000
Less: Capital expenditures	$000,000
Balance available for dividends	$000,000

Depreciation and other book "write-offs" should not be considered in this schedule. Such items belong only to a profit-and-loss picture and it must be understood that the budget is not a profit-and-loss statement, although it utilizes essentially the same figures.

The expenditure and revenue statement is a monthly schedule taken from the books of account on an accrual basis by departments and it is matched with the budget in order to determine the progress of the operating departments. It is also used by the treasurer, after being reconciled to a cash basis by the addition and elimination of receivables and payables as of the beginning and end of the month, if necessary. As previously stated, this adjustment to a cash basis is more or less complicated and is most frequently not justified, since the "carry over" at the beginning and end of the month is usually an equal factor which permits the treasurer to use the expenditure-and-revenue schedule on an accrual basis as a cash picture. Occasionally, extraordinary items creep in which make it necessary to adjust the accrual basis to a cash basis before the treasurer can utilize the figures, but this is the exception rather than the rule.

It should be remembered that the entire budget procedure must be accomplished quickly in all its aspects. Otherwise, it will have no value as a guiding factor. In endeavoring to accomplish this, it is necessary occasionally to estimate certain figures, especially where operations are many miles removed from the controlling office. It should therefore be understood that the current monthly results, while controlled by the books, will not exactly check with them. However, cumulative totals brought forward should be adjusted to a strictly book basis.

One can readily see the simplicity, accuracy and celerity with which the accounting department can currently gather expenditures and revenue from the books on an accrual basis. To attempt to gather such items on a strictly cash basis according to the full meaning of this term represents an undertaking whose difficulty is not justified by results, and it should not be attempted. To attempt to meet the situation half way and devise a condensed separate distribution on a cash basis, independent of the books, would result in figures which could not be properly controlled and would be less accurate for the treasurer's use than the expenditure-and-revenue statement taken as compiled.

The profit-and-loss schedule requires little explanation to those familiar with accounting. It is composed of the operating and overhead items shown on the expenditure-and-revenue schedule, but it excludes all capital expenditures. In lieu thereof the items of depreciation and other book "write-offs" are inserted. The result represents the net profit or loss of the company sub-divided by departments if desirable. This schedule is entirely different from the budget or the expenditure-and-revenue schedule and should enjoy clear distinction, as it is analyzed on a different plane of reasoning. Operating executives frequently misunderstand the profit-and-loss statement by expecting it to agree with the budget or the expenditure-and-revenue schedule without reconciliation.

A budget committee or its equivalent should be formed, vested with full power to control and administer the budget program. It should have frequent meetings and its membership should consist of the operating executives of the company, including the treasurer and the comptroller. In addition, the individual person in charge of the budget department (a branch of the accounting department) should be in attendance at all meetings and act in the capacity of conferee. This committee should exercise full control over the approval of authorizations covering capital expenditures.

Operating Procedure

1—As the first step in budget procedure, the operating executive of each department should prepare, at the beginning of the year, an estimate of the probable revenue and expenditure of his department for the year. This estimate should be subdivided by quarters. These data become the basis for the annual budget and are turned over to the budget division of the accounting department for assembling. The figures are based upon business done and not upon cash, as the operating executive is not mindful of the treasurer's cash disbursements and collections.

2—The second step occurs monthly when the accounting department prepares a monthly schedule of expenditures and revenue taken from the books of account on an accrual basis. This schedule excludes items ordinarily distributed to the company's accounts resulting from exchanges, transfers, depreciation and other entries not involving the expenditure of cash, with the exception of warehouse supplies. This latter item should be included as an expenditure the same as cash. It should be understood that some companies consider warehouse material the same as cash in the bank and do not treat the expenditure of funds for warehouse stock as budget items, but wait until the supplies have been consumed, when the transfers are picked up as budget expenditures. Other companies assign supplies when purchased directly against departments and operations.

In order to simplify the gathering of these data by the accounting department without re-analyzing the entire month's distribution, it is necessary to distribute cash vouchers separately from journal vouchers (transfer entries). The journal-voucher distribution should then be further analyzed in order to pick out warehouse transfers and other exceptional items. These should be added to the cash-voucher distribution in total, thus giving a quick result of expenditures for budget purposes.

The revenue is gathered from the bill register and/or cashbook according to the particular system operated by each company.

This monthly schedule of expenditures and revenue should be prepared simultaneously with the monthly trial balance and before any other financial-statement work is accomplished. It is necessary to have this schedule in the hands of the budget committee for review as soon after the close of the current month as possible. Any delay detracts from the usefulness of the statement, as the figures lose importance and vitality when submitted to executive officers long after the events occur, and prompt and effective remedy is retarded. After the schedule has been pre-

pared it is given to the chief of the budget division for assembling into a comparative statement with the budget for a similar period. The comparative statement is then submitted to the budget committee at its next meeting for review and discussion.

3—Simultaneously with the preparation of the operating schedules for review by the budget committee, the accounting department should supply figures to the budget division by which the expenditure-and-revenue schedule can be converted to a cash basis for use by the treasurer.

Conclusion

When first installing a budget system anything of an elaborate nature should be avoided. While occasionally a complex system is essential, the better method is to make the beginning on a simple basis and evolve gradually. The elaborate procedure should not be continued unless the expense of maintenance is fully justified. It must be remembered that the more complex the system, the greater the red tape and delay if emergencies require an overstepping of the set requirements. It is also most impractical to hamper by a complex budget system those operations requiring immediate action and decision.

Finally, it is essential to study and learn the best manner in which to present the budget story to the company's executives, for requirements are different in every case and no stock form of setting forth the information can be adopted for all companies. The supervisor of the budget division must assume the responsibility of instructor, as the executives and accounting department should have the same understanding of the meaning of terms and of composition of schedules in the budget system.

Payroll and Payroll Methods*

By Neal S. Doran [1]

"Payroll and Payroll Methods" is a large subject and an important one, in that it represents so large a proportion of the disbursements of all business concerns. I will not attempt an appraisal of the different methods, but will limit my remarks to the methods employed by the company which I represent. The Kansas City Public Service Company is a large employer, perhaps the largest in the city or vicinity and our payrolls carry some 3,000 to 3,600 employees, and amounted in the year 1927 to $5,730,000. The number of employees varies with the season of the year, being greatest during the summer, when track construction and maintenance are at their heights, and least in the winter, when outdoor work and maintenance are limited to absolute necessity.

Character of Employment Diversified

The character of employment is so diversified with us that different methods of timekeeping and assembling of payrolls are found necessary for different departments. First in importance is the Transportation Department, which employs approximately 1,500 trainmen and bus operators, operating out of eight different divisions and covering 51 different transportation lines. In addition to the 1,500 trainmen, there are also employed, by the Transportation Department, some 400 employees covering inspectors, flagmen, division superintendents, division clerks, car placers and switchmen, etc. Our problem is to assemble the payrolls and distribute the number of hours and wages earned to each of the 51 lines operated and to divide the total cost of transportation into 15 major accounts required by the Interstate Commerce Commission, which body provides rules of accounting for street railways as well as for steam railroads. For our own purposes and information, many of these major accounts are subdivided.

Detailed methods of acquiring these results will now be described. Each employee of the Transportation Department is assigned a badge number, which is worn at all times when on duty, and the badge is used on all occasions for purposes of identification. Operating schedules are prepared for each of the 51 lines. The trips or runs, and the time allowed for each, are shown on the schedule. As the conditions vary according to the day of the week, distinctly separate schedules must be prepared for Saturdays and Sundays from those of the remaining days of the week. The trainmen, upon reporting, sign what is called a "Sign-up" sheet and upon completion of the run, sign off on the same sheet and turn into the division office a trip report showing time in and out of the division for each trip made on each run, number of transfers collected, and other information not necessary for payroll purposes, but required for statistical purposes. The time clerk at the division makes up a daily report for each line from the sign-up sheet and the trip reports of the operators. These time reports are columnar and have columns; (1) for regular time allowance, which is balanced with total number of hours allowed on the schedule in use for that day; (2) a column for extra time allowed for delays; and (3) one for any other allowances. These daily time sheets are received on the following day in the payroll division of the Comptroller's Office, where the payroll is assembled. Blank payrolls have already been prepared for each division by the use of machines, which print on the payroll the name, badge number, hourly rate and date employee entered service. This last is necessary, as all trainmen are paid a minimum rate for the first 90 days of service, advanced 2 cents per hour for the next 9 months, 2 cents per hour for the next year, and a final 2 cents per hour for the third and successive years. Added to this is a differential of 8 cents per hour paid to all men operating one-man cars or busses, so that it is necessary that the hourly rates be constantly revised. The payroll sheet carries a column for each day of the period, for the number of hours worked. In the event that more than one account is chargeable with the time, it is split to show the number of hours charged to each different account. At the end of the period covered by the payroll, they are passed to calculating machine operators and extended as to hours and distribution of charges and at the rate of the employee, and the result entered in a column provided for the amount earned.

Deductions from Pay

The next column on the sheet covers deductions from pay. As deductions are made from approximately all employees for Brotherhood dues, extra insurance carried, uniform account, saving and loan association, and charity subscriptions, no small amount of work is necessary to keep a record of such deductions. Finally, the amount due to the employee is shown in a final column, and all cross footing and totals verified.

Next employees' envelopes are prepared, showing the name, badge number, amount earned, deductions and amount due, the total of the amounts on the envelope being verified with the total on the payroll. Next, identification slips, familiarly known as "Identies" are prepared, showing the badge number and amount earned. These are sent to each division for delivery to employees for use in claiming their pay. Next, change lists are drawn off for the use of the Paymaster in drawing money for the payroll, and these show the amount of each denomination of currency or change he will require to fill the envelopes. The payroll now passes from the Comptroller's office to the Paymaster's office for payment.

Before proceeding with the actual payment of the rolls, let me outline briefly the methods governing preparation of payrolls of other departments.

Mechanical Department

The next department in line of importance and number of employees is the Mechanical Department, employing about 475 men, to which department falls the construction and maintenance of all

[1] Compt., Kansas City Public Service Company, Kansas City, Mo.
* From N. A. C. A. Bulletin

equipment, passenger, service, and work cars. The main body of the Mechanical Department is employed in the shops, where the repairing and maintenance of all street cars is done. In the garage about 50 employees are similarly engaged on our busses, and at each division small forces of mechanics are engaged in inspection, minor repairs, cleaning and sweeping of cars.

At the shops, clock numbers are assigned to all employees. All work is done under production or shop orders. Time cards are issued to each individual employee, bearing his name, clock number and description of work upon which he is engaged. At the end of each day his time card is given to his foreman, checked by the foreman, signed and forwarded to the timekeeper in the shop office, where the payroll is prepared in practically the same form as described in connection with the Transportation Department, except that the total hours allowed employees upon the payroll, is checked with the clock tape, which is punched when employees go to work and punched when leaving work. Distribution of charges upon the payrolls, is made from the time cards as approved by the foreman, assembled by the Timekeeper and reported to the Comptroller's office for final record. Interstate Commerce Commission classification require for expenditures for maintenance of equipment some 15 major accounts which are very much amplified for our own purposes, records, and information. The payrolls for each period are sent to the Comptroller's office, where final check is made, envelopes prepared, identies issued and sent to the shop for distribution to employees, change list prepared and delivered to the Treasurer for payment.

Next in importance, at least at this time, is the Construction Department, which is engaged in the gigantic task of rebuilding tracks, bridges and buildings on a very large scale. The extent of this rebuilding program may be realized when I inform you that during the year 1927 in excess of $4,000,000 had been spent on new construction and rehabilitation, and that our budget for this year provides for a further expenditure of $2,500,000 for the same purpose. As the construction forces are generally engaged in large numbers for a considerable length of time at one location, Timekeepers are employed to keep the time and make the distribution on the job. All new or rehabilitation work is covered by authorities, which are issued in serial numbers to which the original cost is assigned, which is later analyzed by engineering and accounting departments, and distributed between maintenance and capital expenditures. Timekeepers' books or statements are sent daily to the Construction Department office, where the payrolls are assembled in much the same manner as heretofore described, aside from the fact that the Construction Department rolls are closed and paid weekly. The method of handling through the Comptroller's office to the Treasurer, is exactly similar to that of the other departments heretofore described.

Maintenance and Electrical Departments

We have next the Maintenance and Electrical Departments, to which fall the ordinary track building, bridge and paving maintenance and repairing, and to the Electrical Department the overhead and electric line maintenance. As these departments employ small groups scattered throughout the city, each under a foreman, the time and distribution of the time is made by the foreman daily to the Maintenance Department office, where payroll is assembled as in the case of Mechanical and Construction Departments.

We have next the Store Department, handling the receipt and issuance of all materials purchased for all departments. Employees of this Department report to the General Storekeeper. Stores Office payroll is prepared and sent to the Comptroller's office for handling as in all other cases.

This brings us down to the final payrolls, that of General office employees, whose time is kept and payrolls made in the office of the Comptroller, and turned in to the Treasurer's office for payment as in all other cases.

It is obvious that so large a payroll as we have, and payable in all sections of the city, could not, without a very large Paymaster's force and with great hazard be paid in its entirety at one time. A convenient schedule therefore is arranged extending over a period of five days semi-monthly, during which all the Division and Shop rolls are paid by cash system twice each month. Track rolls are paid by cash system each Saturday for the week ending Wednesday. All office forces are paid by check system semi-monthly.

Upon receipt of payroll from the Comptroller's office, check is made to the Paymaster for the amount payable. The Paymaster takes the company automobile with armed guard to the bank and secures the money in denominations to agree with his change list. From now until the payment of the rolls is complete, the money is in charge of the Paymaster and his assistants who are continually accompanied by armed guard or guards furnished by the company's Police Department. The first duty of the Paymaster is to verify the correctness of the amount secured from the Bank. Then the filling of the envelopes is done by two of the Paymaster's clerks. The first counts out the amount shown on the envelope, turns the envelope over and passes it with the money to the second clerk, who counts the money, notes the amount on the reverse side of the envelope, which he now picks up, and places in it the money, comparing at the same time his notation with the amount on the face and if agreed, places it in a tray unsealed. When the entire roll is thus completed, if it checks correctly the envelopes are sealed and ready to go to the Division for payment. A Paymaster's car, a small two-truck street car, is used for this purpose, arranged for convenience and facility. Accompanying the Paymaster are two guards and the motorman, all of whom are deputized as special officers and plentifully armed for protection. All employees know when the Pay Car is due and not much time is lost in covering the entire number of employees, who of course constantly look forward to pay day. The employee is required to show his badge or give his clock number, which is checked with the number on the envelope. Then he is required to produce his "Identy" properly endorsed, which is taken up by the Paymaster, compared with name and amount on the envelope, and if agreed, he is handed his envelope and moves on. Very seldom indeed is any claim made of a shortage in the amount received. In fact, I can remember but once in 8 years' experience when he had to make up an amount claimed short and we could not prove that the amount had been in the envelope. We were either beaten out of the amount or the bill may have been destroyed in the opening of the envelope.

The unclaimed envelopes are brought back to the office and held for two or three weeks, during which time the most of them have been claimed. Then Comptroller's office checks and stamps on the rolls all paid amounts, and what is left is removed from the envelopes, a record of unclaimed wages made in detail, and the amount charged to cashier's fund. From this subsequent claims are paid until items become six months old, when they are cleared from Cashier's account, and deposited to the company's credit in an unclaimed wage account, from which any subsequent claims are paid by regular voucher.

Construction Department and Maintenance Department rolls are paid in same manner except by company automobile, which is more convenient and efficient because of the smaller units of forces to be reached and the widely scattered locations of such groups. The Paymaster as usual, is accompanied by armed guard and when the rolls are for large construction forces involving large amounts, the Paymaster's auto is followed by another car with one or two armed guards.

Any employee missing the Pay Car must call at the office for his pay and prove his identity in the same manner as before described. No employee is permitted to assign his pay or permit another to draw his pay for him except in case of physical disability due to sickness or accident, so that we are fairly well insured against "straw" men.

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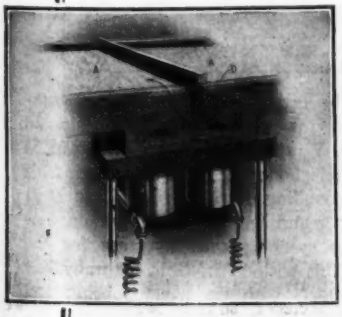

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Are you making paper for insulating purposes? If so, our *Type B Iron Extractors* are a necessary part of your equipment.

Hundreds of these extractors are in use in the United States, Canada, and Europe. Write us for Bulletins and full data.

THE ROLAND T. OAKES CO., Holyoke, Mass.

Electrical Specialists ***Established 1885***

All payrolls are paid on the cash plan as explained, except officers, division superintendents and assistants, and general office clerks, who are paid by check on semi-monthly rolls.

In many respects I favor the check system for all payrolls, particularly because of reducing the hazard of hold-ups, and avoiding the handling of funds, but we find it impractical for many reasons. Our division points are generally at places well out from the center of the city where banking facilities are very limited. At no point is there more than one bank and then only a small one not equipped to handle a payroll of $35,000 or $40,000 in one day's business. Several years ago we experimented at one of our large divisions and the result was far from satisfactory. The small neighborhood bank whose cooperation we sought required us to deposit with them sufficient funds to meet the roll. The men were disappointed and dissatisfied on receiving a check instead of cash, as they found it difficult without losing time to get the check cashed. Then when the payroll was completed we received a bill from the bank at the rate of 25 cents for each check cashed, which of course brought forth a howl from us. It was compromised and paid at the rate of 12½ cents per check. This experiment was far from satisfactory to either the company or the employees, and we went back to the cash system, which seems best adapted, under conditions prevailing, for our purposes.

A Disagreeable Necessity

In conclusion, one annoying and disagreeable necessity thrust on us is that of answering garnishments. During the receivership employees were exempt from garnishment, but immediately following the receivership, loan sharks and installment houses jumped on us like vultures and in less than a month we were required to answer no less than four or five hundred garnishment notices, fully half of which were run against parties not on our payroll and employees who had left service. It looked as if these people may have gone through our files and run a notice against us on every bad account they had in the hope perhaps of locating their man. Everything is done to discourage the employees from permitting garnishments to be filed against him, but notwithstanding, there are from 50 to 100 or more served against us every month.

Preparing to Build Paper Mill at Chico

CHICO, Cal., August 23, 1928.—Work was begun in Richvale on the draining of water and the leveling of land east of the depot, preparatory to building a spur track which will be used for the proposed $1,000,000 rice straw paper mill.

County Engineer Harry H. Hume is seeking the authority of the state railroad commission to construct a public crossing over the Southern Pacific tracks there, in order to provide entrance from the state highway to the proposed site of the new mill.

Sentney Paper Service Incorporates

INDIANAPOLIS, Ind., August 27, 1928.—Articles of incorporation have been filed with the secretary of state of Indiana by the Sentney Paper Service, Inc., of Indianapolis. The corporation has an initial capital stock of $10,000 and is formed to make tion." The incorporators are John R. Sentney, Ernest E. Owens "paper specialties and paper products of every kind and descripand Charles H. Heaton.

Berkshire Paper Co. Chartered

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 27, 1928.—The Berkshire Paper Company, Adams, Mass., manufacturers and general dealers in writing papers, etc., has been incorporated. The capitalization is 10,000 shares no par stock. The incorporators are Henry L. Harrington, Earl H. Davenport and Perley W. Aldrich, all of Adams.

Brown-Bridge Mills Busy

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, August 20, 1928.—The Brown-Bridge Mills, Inc., the newest industry in Troy, 20 miles north of this city, is busy filling orders and night operations are in progress. The company has not been established long and its record to date is unusual. In fact, when remodeling work of the old Hayner distillery buildings which the company acquired and rebuilt was in progress, traveling men were scouring the country in quest of orders. Consequently, when the plant was ready for operation there was a goodly supply of orders on hand and the mills have been busy on gummed paper and cloth since the wheels first started.

The new plant, which is located on East Water street, is the last-word in up-to-date machinery and methods for gumming all kinds of paper and cloth. Numerous labor-saving devices have been installed with a view to producing a superior product at low cost.

It is expected that by September 1, the plant will be producing a large volume of gummed paper goods and giving employment to a substantial force of men and women. This will result in a large payroll with its consequent effect on the prosperity of Troy.

C. W. Shartle was elected president of the company at a recent organization meeting. Other officers chosen were:—P. H. Bridge, first vice-president and treasurer; Clay D. Geisinger, second vice-president; Herbert S. Brown, secretary; and Scott Bridge, assistant secretary-treasurer.

The Board of Directors consists of C. W. Shartle, H. S. Brown, C. C. Willard, Clay Geisinger, Frank Mayo, Kenneth Hoffman, John Renahan, J. A. Shartle, Scott Bridge and P. H. Bridge.

The Brown-Bridge Mills Company is incorporated with a capital of $200,000 and it is stated that much of the stock has been taken by Troy residents attesting to the confidence held in the promoters of the enterprise and in the management.

Hoped to Defeat Tunney

[FROM OUR REGULAR CORRESPONDENT]

BRIDGEPORT, Conn., August 17, 1928.—Steve Haydu, a paper mill worker, who charged that he paid two youths $1,200 on their promise to get him a match with Gene Tunney for the championship and a purse of $1,000,000, providing he would follow their training directions, drew scant sympathy from Judge Buckley in City Court today when he told his story. The Judge dismissed the charges of obtaining money under false pretenses which Haydu had brought against Sam Baker and Frank Weres.

Haydu said he had placed himself and his bankroll in the keeping of Weres and Baker a year ago. They prescribed diet and exercise for the pugilistic aspirant. A sandwich a day and some wine with a hard-boiled egg on Sunday constituted his rations, Haydu testified. In a year his weight dropped from 165 to 130 pounds.

"Do you still want to fight Tunney?" asked Prosecutor Thomas Finn.

"No, I'm through," said Haydu. "I'm going to stay in the paper mill."

Julius Gold Exclusive Dexter Selling Agent

Julius Gold, who is now the exclusive selling agent for the metropolitan district and vicinity for the Dexter Sulphite Pulp and Paper Company, of Dexter, N. Y., making his headquarters at 55 West 42nd street, New York, telephone Longacre 3451, begins his new field of operations after rounding out a service of nearly 31 years with the Continental Paper and Bag Mills Corporation, sixteen years of which time was spent as sales manager for the metropolitan district. During this period Mr. Gold naturally had opportunity of developing contacts with the paper jobbing and converting trade. He is now prepared to undertake representation on non-competitive lines in any branch of the paper industry.

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JOHN W. BOLTON & SONS, INC.

EAGLE KNIFE & BAR WORKS

Lawrence, Mass.

The only firm making KNIVES for every machine from wood pile to finishing room.

It's the KNIVES that do the work!

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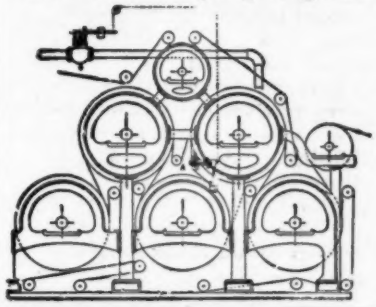
WE ARE SAFE IN OUR PROPOSITION

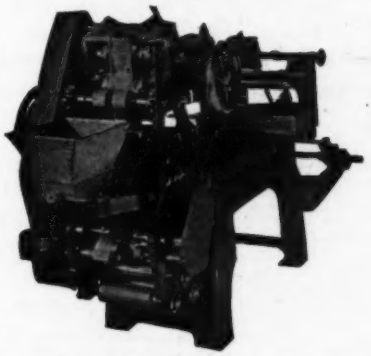
YOU'LL MAKE NO MISTAKE IN ACCEPTING IT



Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**



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Paper Bag Machinery

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Special Machinery Designed and Built

A. L. PARRISH.

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Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company

PROVIDENCE, R. I.

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 1, 1928

SUMMARY

Cigarette paper .....633 cs.
Wall paper .....27 bls., 53 cs.
Paper hangings .....17 bls., 13 cs.
Hanging paper .....4 cs.
News print .....3,169 rolls
Printing paper .....116 rolls, 370 cs.
Wrapping paper .....7 cs.
Packing paper .....1 cs.
Writing paper .....17 cs.
Cellophane paper .....1 cs.
Surface coated paper .....121 cs.
Baryta coated paper .....220 cs.
Gold coated paper .....11 cs.
Metal paper .....31 cs.
Greaseproof paper .....18 cs.
Bowl paper .....23 cs.
Decalcomania paper .....58 cs.
Silk paper .....20 cs.
Drawing paper .....57 cs.
Filter paper .....27 cs.
Tracing paper .....5 rolls
Tissue paper .....122 cs.
Colored paper .....219 cs.
Crepe paper .....12 cs.
Stencil paper and ink .....40 cs.
Cover paper .....8 cs.
Sulphate paper .....419 rolls
Cardboard .....125 cs.
Pasteboards .....11 cs.
Straw board .....630 rolls
Miscellaneous paper...2,364 rolls, 365 bls., 202 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Waukegan, Havre, 268 cs.
De Manduit Paper Corp., Liberty, Havre, 324 cs.
Standard Products Corp., De Grasse, Havre, 40 cs.
H. H. Straus, La Bourdonnais, Havre, 1 cs.

WALL PAPER

Smith & Pritchard, Mauretania, Southampton, 1 cs.
G. W. Sheldon & Co., Waukegan, Havre, 2 cs.
F. J. Emmerich, Berengaria, Southampton, 1 ble.
F. J. Emmerich, Adriatic, Liverpool, 3 bls.
F. A. Binder, Dresden, Bremen, 9 bls.
Bendix Paper Co., Hamburg, Hamburg, 8 cs.
Downings, Inc., Hamburg, Hamburg, 1 ble.
A. C. Dodman, Jr., Inc., Hamburg, Hamburg, 1 cs.
Globe Shipping Co., Hamburg, Hamburg, 6 cs., 1 ble.
C. Grimmer & Son, Hamburg, Hamburg, 1 ble.
Globe Shipping Co., Resolute, Hamburg, 2 cs.
J. E. Bernard & Co., Resolute, Hamburg, 11 bls.
American Exchange Irving Trust Co., Resolute, Hamburg, 33 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Caronia, London, 17 bls., 3 cs.
Whiting & Patterson Co., Inc., Olympic, Southampton, 3 cs.
Whiting & Patterson Co., Inc., Mauretania, Southampton, 7 cs.

HANGING PAPER

R. F. Downing & Co., Paris, Havre, 1 cs.
Tice & Lynch, Paris, Havre, 1 cs.
C. F. Samalle, Paris, Havre, 2 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Sparreholm, Kotka, 616 rolls.
Parsons & Whittemore, Inc., Malaren, Kotka, 616 rolls.
H. Reeve Angel & Co., Inc., Malaren, Kotka, 527 rolls.
Parsons & Whittemore, Inc., Dresden, Bremen, 180 rolls.
Guaranty Trust Co., Bergensfjord, Follum, 328 rolls.
Gilman Paper Co., Korsholm, Norrkoping, 509 rolls.
Perkins Goodwin & Co., Thuringia, Hamburg, 393 rolls.

PRINTING PAPER

C. Steiner, N. Amsterdam, Rotterdam, 7 cs.
Lincoln Paper Co., Dresden, Bremen, 69 rolls, 65 cs.
Walker, Goulard, Plehn Co., Dresden, Bremen, 40 cs.
Judson Freight Forwarding Co., Dresden, Bremen, 25 cs.
F. J. Emmerich, De Grasse, Havre, 2 bls.
E. Dietzgen & Co., Inc., Hamburg, Hamburg, 44 cs.
Perkins Goodwin & Co., Thuringia, Hamburg, 102 cs.
Keuffel & Esser Co., Resolute, Hamburg, 47 rolls.
J. I. Bernitz, Brazil Maru, Hamburg, 65 cs.
E. Dietzgen & Co., Inc., Rotterdam, Rotterdam, 5 cs.
Hensel, Bruckman & Lorbacher, Rotterdam, Rotterdam, 17 cs.

WRAPPING PAPER

Birn & Wachenheim, Belgenland, Antwerp, 7 cs.

PACKING PAPER

International Forwarding Co., Hamburg, Hamburg, 1 cs.

WRITING PAPER

Coenca Morrison & Co., De Grasse, Havre, 9 cs.
The Eleto Co., Hamburg, Hamburg, 2 cs.
J. E. Bernard & Co., Mauretania, Southampton, 5 cs.
American Express Co., Liberty, Havre, 1 cs.

CELLOPHANE PAPER

M. J. Corbett & Co., Mauretania, Southampton, 1 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Belgenland, Antwerp, 85 cs.
Gevaert Co. of America, Belgenland, Antwerp, 35 cs.
Phoenix Shipping Co., Hamburg, Hamburg, 1 cs.

BARYTA COATED PAPER

Globe Shipping Co., America, Bremen, 50 cs.
J. H. Schroeder Banking Corp., America, Bremen, 30 cs.
J. H. Schroeder Banking Corp., Pres. Harding, Bremen, 60 cs.
Globe Shipping Co., Pres. Harding, Bremen, 80 cs.

GOLD COATED PAPER

F. Murray Hill, Dresden, Bremen, 11 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, Dresden, Bremen, 31 cs.

GREASEPROOF PAPER

Central Union Trust Co., Resolute, Hamburg, 18 cs.

BOWL PAPER

Hurley Johnson Corp., Laconia, Liverpool, 23 bls.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Adriatic, Liverpool, 12 cs. (duplex).
L. A. Consmiller, Hamburg, Hamburg, 8 cs.
C. W. Sellers, Hamburg, Hamburg, 10 cs.
C. W. Sellers, America, Bremen, 6 cs.
C. W. Sellers, Pres. Harding, Bremen, 10 cs.
C. W. Sellers, Resolute, Hamburg, 4 cs.
L. A. Consmiller, Resolute, Hamburg, 8 cs.

SILK PAPER

Whiting & Patterson Co., Inc., N. Amsterdam, Rotterdam, 6 cs.
Whiting & Patterson Co., Inc., Rotterdam, Rotterdam, 6 cs.
Meadows, Wye & Co., Bellepline, Rotterdam, 18 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Caronia, London, 2 cs.
Keuffel & Esser Co., Resolute, Hamburg, 55 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Caronia, London, 22 cs.
Phoenix Shipping Co., Resolute, Hamburg, 5 cs.

TRACING PAPER

Keuffel & Esser Co., Resolute, Hamburg, 5 rolls.

TISSUE PAPER

Van Vlaasteren Machine Co., Waukegan, Havre, 10 cs.
G. W. Sheldon & Co., American Banker, London, 8 cs.
B. F. Drakenfeld & Co., Adriatic, Liverpool, 5 cs.
Old Master Paper & Pulp Corp., Hamburg, Hamburg, 89 cs.
F. B. Vandegrift & Co., Laconia, Liverpool, 4 cs.
Standard Products Corp., Minnekahda, London, 6 cs.

COLORED PAPER

Borden Riley Paper Co., Belgenland, Antwerp, 7 cs.
J. Beckhard & Co., America, Bremen, 1 cs.
W. Bersch, Dresden, Bremen, 2 cs.
L. Schulman & Co., Dresden, Bremen, 14 cs.
E. Dietzgen & Co., Inc., Hamburg, Hamburg, 132 cs.
E. Dietzgen & Co., Inc., Brazil Maru, Hamburg, 40 cs.
S. Gilbert, Pres. Harding, Bremen, 20 cs.
F. L. Kramer & Co., Pres. Harding, Bremen 3 cs.

CREPE PAPER

J. Beckhard & Co., America, Bremen, 12 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., Hamburg, Hamburg, 35 cs.
Globe Shipping Co., Resolute, Hamburg, 5 cs.

COVER PAPER

International Forwarding Co., Hamburg, Hamburg, 8 cs.

SULPHATE PAPER

Insight Paper Co., Bergensfjord, Oslo, 419 rolls.

CARDBOARD

American Express Co., Hamburg, Hamburg, 125 cs.

PASTEBOARDS

Japan Paper Co., Conte Grande, Genoa, 11 cs.

STRAWBOARD

C. H. Powell & Co., N. Amsterdam, Rotterdam, 110 rolls.
Grand Corrugated Paper Co., Inc., N. Amsterdam, Rotterdam, 96 rolls.
C. H. Powell & Co., Rotterdam, Rotterdam, 174 rolls.
A. Vuyk, Rotterdam, Rotterdam, 250 rolls.

MISCELLANEOUS PAPER

Globe Shipping Co., N. Amsterdam, Rotterdam, 39 cs.
International Forwarding Co., N. Amsterdam, Rotterdam, 17 cs.
The Borregaard Co., Inc., Bird City, Gothenburg, 172 bls.
Pratt Paper Co., Bird City, Gothenburg, 2,090 rolls, 10 bls.
Union Paper & Twine Co., Bird City, Gothenburg, 38 rolls, 30 bls.
Arkell Safety Bag Co., Bird City, Gothenburg, 30 rolls.
Messinger Paper Co., Bird City, Gothenburg, 50 rolls, 62 bls.
Mugler & Umlauf, Bird City, Gothenburg, 35 bls.
R. F. Fitzgerald, Hamburg, Hamburg, 12 bls.
Wilkinson Bros. & Co., Inc., Korsholm, Norrkoping, 36 bls., 156 rolls.
Standard Products Corp., Paris, Havre, 40 cs.
Perry Ryer & Co., Paris, Havre, 5 cs.
F. C. Strype, Paris, Havre, 18 cs.
Canson & Montgolfier, Paris, Havre, 14 cs.
Japan Paper Co., Conte Grande, Genoa, 20 cs.
Globe Shipping Co., Rotterdam, Rotterdam, 21 cs.
J. Beckhard & Co., Rotterdam, Rotterdam, 12 cs.
Steffens, Jones & Co., Rotterdam, Rotterdam, 16 cs.
Walker, Goulard, Plehn Co., Rotterdam, Rotterdam, 8 bls.

RAGS, BAGGINGS, ETC.

W. Schall & Co., N. Amsterdam, Rotterdam, 170 bls. bagging.
Standard Bank of South Africa, N. Amsterdam, Rotterdam, 90 bls. cotton waste.
W. Steck & Co., N. Amsterdam, Rotterdam, 24 bls. cotton waste.
Chemical National Bank, N. Amsterdam, Rotterdam, 119 bls. rags.
Brown Bros. & Co., Gourko, Manchester, 57 bls. bagging.
G. W. Millar & Co., Gourko, Manchester, 214 bls. rags.
G. W. Millar & Co., Gourko, Manchester, 122 bls. bagging.
E. J. Keller Co., Inc., Gourko, ——, 43 bls. rags.
Guaranty Trust Co., Sorvard, Genoa, 45 bls. rags.
Castle & Overton, Inc., Sorvard, Genoa, 53 bls. rags.
Castle & Overton, Inc., Sorvard, Barcelona, 236 bls. rags.
Warren Manfg. Co., Sorvard, Barcelona, 178 bls. bagging.
The Barrett Co., Denmark Maru, Genoa, 82 bls. rags.
J. Cohen & Son Co., Caronia, London, 3 bls. rags.
B. D. Kaplan, Waukegan, Havre, 29 bls. rags.
Castle & Overton, Waukegan, Havre, 120 bls. rags.
W. Schall & Co., Waukegan, Havre, 186 bls. rags.
Katzenstein & Keene, Inc., Waukegan, Havre, 160 bls. rags.
Katzenstein & Keene, Inc., Waukegan, Havre, 183 bls. bagging.
Bank of Commerce & Trust Co., Waukegan, Dunkirk, 90 bls. rags.
Van Oppen & Co., America, Bremen, 11 bls. rags.
A. W. Fenton, Inc., Dresden, Bremen, 137 bls. rags.

(Continued on page 76)

THE NEW FLATHER MACHINE

of Nashua, New Hampshire, for

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is guaranteed to give you the best finish, biggest production, least trouble and most satisfaction of any equipment on the market today.

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Time Outs!

There's the hitch! So many minutes to get the job done—minutes that represent money. Suddenly a belt breaks—then where does "time out" fit in?

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SKID-EM-ON TRUCKS

Now you can avoid all danger of damage to men or merchandise, when paper rolls are handled with SKID-EM-ON trucks. Made in two types. END LOADER for Short Rolls where aisle and doorways are amply wide. SIDE LOADER for Long Rolls in close quarters, narrow aisles and doorways. 30 Days Free trial. If not satisfied, we pay return freight. State diameter, length and weight of largest rolls you wish to handle and which style truck you prefer—END LOADER or SIDE LOADER. Order one today.

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Blow Pits
Acid Storage
Tanks, Vats,
Etc.

Send us your specifications for prompt shipment.

Kalamazoo Tank & Silo Co.
Kalamazoo, Michigan

Imports of Paper and Paper Stock

(Continued from page 74)

Chase National Bank, Dresden, Bremen, 169 bls. rags.
Bank of The Manhattan Co., Dresden, Bremen, 73 bls. rags.
Union Bank & Trust Co., Dresden, Bremen, 119 bls. rags.
Union Bank & Trust Co., Dresden, Bremen, 140 bls. bagging.
C. B. Richard & Co., Luxpalile, Leghorn, 528 bls. rags.
The Barrett Co., Luxpalile, Leghorn, 114 bls. rags.
Guaranty Trust Co., Luxpalile, Leghorn, 127 bls. rags.
Banco Com'l Italiane Trust Co., Luxpalile, Leghorn, 86 bls. rags.
C. B. Richard & Co., Luxpalile, Naples, 48 bls. rags.
American Exchange Irving Trust Co., Luxpalile, Naples, 10 bls. rags.
Chase National Bank, Carlier, Antwerp, 39 bls. rags.
A. W. Fenton, Inc., Hamburg, Hamburg, 165 bls. rags.
Chase National Bank, Hamburg, Hamburg, 69 bls. rags.
Bank of The Manhattan Co., Bristol City, Bristol, 92 bls. bagging.
National City Bank, Minnekahda, London, 16 bls. paper stock.
National City Bank, Estonia, Danzig, 280 bls. rags.
Chase National Bank, Estonia, Danzig, 166 bls. rags.
E. Mayer, Coahoma County, Antwerp, 2 bls. rags.
A. W. Fenton, Inc., Coahoma County, Antwerp, 285 bls. rags.
A. W. Fenton, Inc., Thuringia, Hamburg, 4 bls. rags.
E. Mayer, Thuringia, Hamburg, 37 bls. rags.
Brown Bros. & Co., Thuringia, Hamburg, 40 bls. rags.
National City Bank, Thuringia, Hamburg, 17 bls. rags.
Chase National Bank, Thuringia, Hamburg, 21 bls. rags.
American Express Co., Resolute, Hamburg, 43 bags rags.
C. B. Richard & Co., Brazil Maru, Hamburg, 392 bls. rags.
E. Mayer, Pres. Harding, Bremen, 83 bls. rags.
American Exchange Irving Trust Co., Pres. Harding, Bremen, 143 bls. cotton waste.
P. Berlowitz, Hog Island, Alexandria, 180 bls. rags.
E. J. Keller Co., Inc., Hog Island, ——, 169 bls. rags.
E. J. Keller Co., Inc., Manchurian Prince, ——, 77 bls. rags.
Castle & Overton, Inc., Manchurian Prince, Dundee, 19 bls. rags.
Castle & Overton, Inc., Bellepline, Rotterdam, 304 bls. rags.
General Fibre Co., Bellepline, Rotterdam, 78 bls. rags.
E. J. Keller Co., Inc., Balsam, ——, 71 bls. rags.
Leigh Textile Co., Balsam, Manchester, 152 bls. cotton waste.
International By-Products Co., Balsam, Manchester, 16 bls. rags.
J. Cohen & Son Co., Balsam, Manchester, 10 bls. rags.
E. Butterworth & Co., Inc., Balsam, Manchester, 73 bls. bagging.
Royal Manfg. Co., Balsam, Manchester, 20 bls. cotton waste.
Goldman Sachs & Co., Liberty, Havre, 134 bls. rags.
Star Woolen Co., Liberty, Havre, 45 bls. rags.
V. Galaup, Liberty, Havre, 190 bls. rags.
Darmstadt, Scott & Courtney, Liberty, Dunkirk, 53 bls. rags.
Salomon Bros. & Co., Liberty, Dunkirk, 63 bls. thread waste.
Salomon Bros. & Co., Liberty, Dunkirk, 15 bls. rags.
Chase National Bank, Half Moon, Algiers, 170 bls. rags.
Van Oppen Co., Rotterdam, Rotterdam, 23 bls. rags.

OLD ROPE

New York Trust Co., N. Amsterdam, Rotterdam, 47 coils.
W. Steck & Co., N. Amsterdam, Rotterdam, 85 coils.
Brown Bros. & Co., N. Amsterdam, Rotterdam, 95 coils.
American Exchange Irving Trust Co., N. Amsterdam, Rotterdam, 56 coils.
Brown Bros. & Co., Gourko, Manchester, 91 coils.
Brown Bros. & Co., Sorvard, Huelva, 345 rolls, 18 bales.
Brown Bros. & Co., Rotterdam, Rotterdam, 33 coils, 37 bales.
International Purchasing Co., Bergensfjord, Oslo. 60 coils.
Bank of The Manhattan Co., Hamburg, Hamburg, 61 coils.
W. Steck & Co., Liberty, Havre, 44 coils.

CHINA CLAY

J. W. Higman & Co., Inc., Sedgepool, Fowey, 1,075 tons, 10 cwt.
J. Richardson & Co., Sedgepool, Fowey, 256 tons, 16 cwt.
Atlantic National Bank, Sedgepool, Fowey, 52 tons, 8 cwt.
C. T. Wilson Co., Inc., Bristol City, Bristol, 25 cks.
C. T. Wilson Co., Inc., Bristol City, Bristol, 134 bags.

CASEIN

Equitable Trust Co., De Grasse, Havre, 469 bags.
Equitable Trust Co., Hamburg, Hamburg, 333 bags, 2,500 kilos.
Equitable Trust Co., Liberty, Havre, 646 bags. 50,050 kilos.
A. Klipstein & Co., Inc., Liberty, Havre, 205 bags, 20,000 kilos.

WOOD PULP

Atterbury Bros., Inc., Hellig Olav, Oslo, 500 bls. wood pulp.
J. Anderson & Co., Malaren, Stockholm, 300 bls. sulphite.
E. M. Sergeant & Co., Korsholm, Gothenburg. 593 bls. dry soda pulp.
Johanson, Wales & Spare, Inc., Korsholm, Gothenburg, 150 bls. dry soda pulp.
Scandinavian Pulp Agency, Inc., Tortugas. Skutskar, 1,530 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Tortugas. Wifstavarf, 2,225 bls. sulphate.
Scandinavian Pulp Agency, Inc., Tortugas. Wifstavarf, 1,250 bls. sulphite.
Equitable Trust Co., Tortugas, Norrsundet. 5,000 bls. sulphite.
Atterbury & McKelvey, Tortugas, Tofte, 660 bls. sulphite.
Perkins, Goodwin & Co., Tortugas, Oslo, 125 bls. sulphite.
Castle & Overton, Inc., Thuringia, Hamburg. 708 bls. wood pulp, 106 tons.
Castle & Overton, Inc., Rotterdam, Rotterdam. 399 bls. wood pulp.
Woodpulp Service Corp., Talisman, Gothenburg. 125 bls. sulphite.

WOOD PULP BOARDS

Lagerloef Trading Co., Dresden, Bremen, 364 bls.
Lagerloef Trading Co., Sparreholm, Kotka, 366 rolls.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 1, 1928

Lagerloef Trading Co., Bird City, Helsingfors, 1,016 bls. wood pulp, 203 tons.
Lagerloef Trading Co., Bird City, Helsingfors, 478 bdls. pulp boards, 78 tons.
Paper Manfg. Co., Inc., Bird City, Gothenburg, 1,387 rolls paper.
Paper Manfg. Co., Inc., Bird City, Gothenburg. 136 bls. paper.
Quaker City Paper Co., Bird City, Gothenburg. 372 rolls, 39 bls. paper.
The Borregaard Co., Bird City, Gothenburg, 53 rolls.
D. L. Ward & Co., Bird City, Gothenburg, 52 rolls.
J. Anderson & Co., Bird City, Gothenburg, 250 bls. sulphite, 50 tons.
J. W. Higman & Co., Inc., Sedgepool, Fowey, 617 tons, 4 cwt. china clay.
Paper Makers Import Co., Sedgepool, Fowey. 2,040 tons, 3 cwt. china clay.
J. B. Moors & Co., Sedgepool, Fowey, 903 tons, 15 cwt. china clay.
Atlantic National Bank, Sedgepool, Fowey, 1,374 tons, 11 cwt. china clay.
J. Richardson & Co., Sedgepool, Fowey, 54 casks, 27 tons china clay.
Equitable Trust Co., Luxpalile, Naples, 103 bls. rags.
Wilkinson Bros. & Co., Inc., Korsholm, Norrkoping, 5 bls. paper.
Paper Manfg. Co., Inc., Korsholm, Gothenburg, 89 bls., 1,389 rolls paper.
J. A. Steer & Co., Bristol City, Bristol, 65 coils old rope.
Bank of The Manhattan Co., Bristol City, Bristol, 165 bls. rags.
G. W. Millar & Co., Coahoma County, Antwerp, 82 bls. rags.
International By-Products Co., Coahoma County, Antwerp, 55 bls. rags.
Castle & Overton, Inc., Coahoma County, Antwerp, 592 bls. rags.
Equitable Trust Co., Coahoma County, Antwerp, 95 bls. rags.
A. Hurst & Co., Coahoma County, Antwerp, 78 bls. rags.
E. Butterworth & Co., Inc., Hog Island, Alexandria, 285 bls. rags.
W. J. Jones, Liberty, Havre, 3 cs. wall paper.
Stephano Bros., Liberty, Havre, 26 cs. cigarette paper.
Strawbridge & Clothier, Liberty, Havre, 5 cs. writing paper.
A. Hurst & Co., Liberty, Havre, 651 bls. rags.
V. Galaup, Liberty, Havre, 156 bls. rags.
G. Mathes & Co., Liberty, Havre, 66 bls. rags.
G. W. Millar & Co., Liberty, Havre, 214 bls. rags.
Bank of New York, Liberty, Dunkirk, 47 bls. rags.
V. Galaup, Liberty, Dunkirk, 221 bls. rags.
J. M. Hagy Waste Works, Liberty, Dunkirk, 100 bls. rags.
G. W. Millar & Co., Liberty, Dunkirk, 168 bls. rags.
S. E. Ingber, Liberty, Dunkirk, 281 bls. rags.
Katzenstein & Keene, Inc., Liberty, Dunkirk, 220 bls. rags.
Guaranty Trust Co., Half Moon, Bari, 129 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 1, 1928

Woodpulp Service Corp., Ranenfjord, Oslo, 800 bls. wood pulp.
Baxter Paper Co., Bird City, Gothenburg, 16 bls., 12 rolls paper.
Congoleum Nairn Co., Waukegan, Havre, 645 bls. rags.
Congoleum Nairn Co., Waukegan, Havre, 233 bls. bagging.
Congoleum Nairn Co., Waukegan, Dunkirk, 57 bls. rags.
C. B. Richard & Co., Luxpalile, Naples, 104 bls. rags.
R. Canovai & Son, Luxpalile, Leghorn, 147 bls. rags.
Congoleum Nairn Co., Luxpalile, Leghorn, 74 bls. rags.
Atterbury & McKelvey, Tortugas, Tofte, 3,600 bls. sulphite pulp.
National City Bank, Bellepline, Rotterdam, 62 bls. rags
National City Bank, Bellepline, Rotterdam, 82 bls. bagging.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 1, 1928

Guaranty Trust Co., Tortugas, Oslo, 509 rolls news print.

HOUSTON IMPORTS

WEEK ENDING SEPTEMBER 1, 1928

Guaranty Trust Co., Tortugas, Oslo, 283 rolls news print.

NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 1, 1928

H. Reeve Angel & Co., Inc., Sparreholm, Kotka, 294 rolls, 92 bls. news print.
Virginian & Pilot Publishing Co., Sparreholm, Kotka, 204 rolls news print.
Virginia Paper Co., Inc., Sparreholm, Kotka, 72 rolls news print.
Old Dominion Paper Co., Sparreholm, Kotka, 20 rolls news print.
Lagerloef Trading Co., Sparreholm, Kotka, 632 rolls wood pulp boards.
Ossian Ray, Korsholm, Gothenburg, 84 rolls news print.
E. M. Sergeant & Co., Korsholm, Gothenburg, 200 bls. sulphite pulp.
Scandinavian Pulp Agency, Inc., Korsholm, Norrkoping, 2,500 bls. sulphite pulp.

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

Prompt deliveries made from stocks in
NEW YORK
BOSTON
PHILADELPHIA
CHICAGO

TRADE MARK

PAR
In Dyestuffs

As every golfer knows par is a standard of excellence. It is a good term to apply to Heller & Merz dyestuffs. They are par dyestuffs because they represent the excellence which exacting users demand.

Heller & Merz service is just as good. Ask us about both.

The HELLER & MERZ COMPANY
505 Hudson St., New York

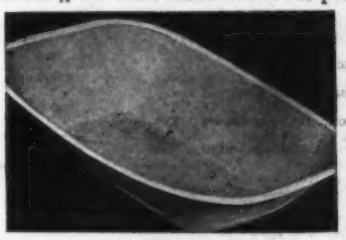
Boston	Chicago	Philadelphia
287 Atlantic Ave.	146 W. Kinzie St.	114 Market St.

Springfield, Mass.
24 Lester Street

Factory—NEWARK, N. J.

No folds— no staples

AND no holes for leakage in Paprus Dishes. Rigid as wooden dishes, and moulded in one piece—yet they cost less than wood or paper dishes! Your grocery, meat market, and delicatessen trade will buy Paprus Dishes for these advantages. Your salesmen will enthuse over them. Your business will grow with them. Write for price list.



PAPRUS DISHES

KEYES FIBRE COMPANY, INC.
General Sales Offices: GRAYBAR BLDG., NEW YORK
Factory: Waterville, Maine. JOHN M. HART COMPANY, *Manager of Sales*

ENGINEERS

Power plants—additions—complete paper mill projects

ONE great organization—a specialist in paper mill engineering and construction—designs, builds, rebuilds, reports, appraises, for many of the most important concerns in the paper industry. Plans, price, construction work, delivery date, owner's satisfaction, all guaranteed.

Ferguson customers include:

Hinde & Dauch Co.	Spencer-Wyane Paper Products Company
A. P. W. Paper Co.	Bennington Wax Paper Company
Mead Pulp and Paper Co.	Oswego Falls Corp.
Chillicothe Paper Co.	Fairfield Paper Co.
Warren Mfg. Co.	

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Hanna Bldg. . Cleveland, Ohio . Phone: CHerry 6878
New York . Detroit . Birmingham . Tokio, Jap—

Ferguson
ENGINEERS

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Belgo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	95	98
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Frange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
International Paper 6s, 1955	102	103
International Paper 5s, 1947	98	100
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munising Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswegatchie Paper Serial 6s, 1932	95	100
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100¼
St. Regis Paper of Canada 6s,, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	101	103½
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com.	150	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Rubberoid	95	101
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	103
Whittaker Paper, 7% Cum. Pfd.	105	None Off.

FINE PAPER DISPLAY AT TORONTO

(*Continued from page 36*)

trades will be well represented among the industries willing to support the project.

The Forest Patrol Air Service of Ontario a few days ago completed 5,000 flying hours in fire and mapping patrol duty for the present year. Capt. Roy Maxwell, Director of Provincial Air Services, anticipates that the year's figures will reach 5,200 hours before the snow flies. During 1927 the force flew 4,861 hours in the fire detection and suppression work. This year's achievement constitutes a record. "It is especially gratifying in view of the fact that we started three weeks later this year than last," said Captain Maxwell.

The sale of a timber berth in the northwestern section of Ontario has been withdrawn by the Ontario Department of Lands and Forests by reason of the failure of tenderers to bid beyond the "upset" price fixed by the Government.

The regular quarterly meeting of the directors of Interlake Tissue Mills, Ltd., has been called for the head office in Toronto on September 6.

Thomas Nuttall, of the well-known British paper mill machinery house of Bentley & Jackson, has arrived in Vancouver and will shortly visit some of the paper mills in Ontario. Mr. Nuttall is manager of the concern.

A. Jewett, who for some years has had charge of the Montreal office of Provincial Paper, Ltd., has arrived in Toronto to take charge of the selling end of Provincial's Port Arthur mill output. K. G. Toy, of the Toronto office will take Mr. Jewett's place in Montreal.

I. H. Weldon, of Provincial Paper, Ltd., has returned to his desk in Toronto after a holiday spent on the French River.

David Robertson, general manager of the Canadian Paperboard Company, was in Toronto last week in connection with construction work of the company's new board mill on the water front. He stated that actual production of board at the plant would commence in about three weeks' time.

Stamped Envelope Bids Rejected

WASHINGTON, D. C., September 5, 1928.—All bids for furnishing 12,800,000,000 stamped envelopes and newspaper wrappers for the four-year period commencing January 1, 1929, received by the Post Office Department, August 7, were rejected by Postmaster General New today.

Three firms competed for the contract. They were the International Envelope Corporation, a subsidiary of the International Paper Company, the Middle West Supply Company of Dayton, Ohio, the present contractors, and the American Envelope Company, of West Carrollton, Ohio. The bids were rejected for the reason that the two lowest did not comply with the specifications of the department.

It was announced by the Postmaster General that sealed proposals under the same specifications will be received in the office of the purchasing agent of the Post Office Department until 2 p. m., Monday, September 17, 1928, when the new bids received will be opened. The present four-year contract, which expires December 31, amounts to approximately $20,000,000.

BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

SUPER ALPHA

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

EASY-BEATING ALPHA

This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

REGULAR ALPHA

This is a grade midway between Super and Easy-Beating.

Use ALPHA for Quality

BROWN Company — FOUNDED 1852 — Portland, Maine

The Babcock & Wilcox Co.

85 LIBERTY STREET, NEW YORK

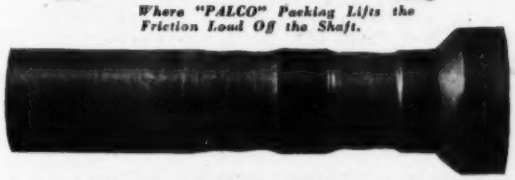
ESTABLISHED 1868

Water Tube Boilers Steam Superheaters
Economizers Air Preheaters
Chain Grate Stokers Oil Burners
Refractories
Seamless Tube and Piping

BRANCH OFFICES

ATLANTA	Candler Building
BOSTON	80 Federal Street
CHICAGO	Marquette Building
CINCINNATI	Traction Building
CLEVELAND	Guardian Building
DALLAS, TEXAS	Magnolia Building
DENVER	444 Seventeenth Street
DETROIT	Ford Building
HOUSTON, TEXAS	Electric Building
LOS ANGELES	Central Building
NEW ORLEANS	344 Camp Street
PHILADELPHIA	Packard Building
PHOENIX, ARIZ.	Heard Building
PITTSBURGH	Farmers Deposit Bank Building
PORTLAND, ORE.	Failing Building
SALT LAKE CITY	Kearns Building
SAN FRANCISCO	Sheldon Building
SEATTLE	L. C. Smith Building
HONOLULU, T. H.	Castle & Cooke Building
HAVANA, CUBA	Calle de Aguiar 104
SAN JUAN, P. R.	Recinto Sur 51

Where "PALCO" Packing Lifts the Friction Load Off the Shaft.



Photograph of a Centrifugal Pump Shaft badly worn by working against flax packing which did not carry sufficient lubricant to prevent friction.

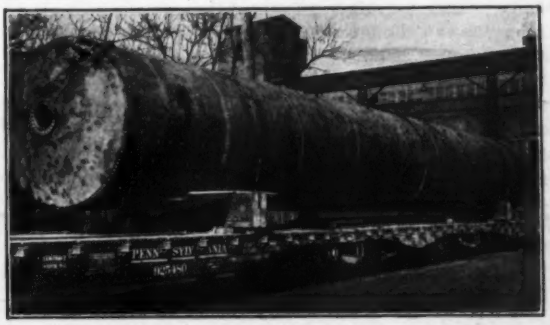
STYLE C PACKING

For pumps handling caustic soda and similar chemicals. Its lubricant can be relied upon to resist the cutting action of these chemicals, and to keep the pump shaft so perfectly lubricated as to avoid friction. To prove our claims let us send you a free working sample to test under your own conditions.

GREENE, TWEED & CO.

Sole Manufacturers

109 Duane St., New York



In Many Paper Mills

Coatesville Products of one sort or another will be found, — Boilers, Stacks, Breechings, Tanks, Digesters, Riveted Pipe, Stand Pipes, Troughs.

In fact, for nearly a HALF CENTURY Coatesville has been turning out "nothing but" the highest grade equipment made of steel plate.

The job illustrated above was entirely made by Coatesville and was shipped "riveted-up" to the Pacific Coast (Length 86'3", width 9'0", weight 154,000 lbs.)

COATESVILLE BOILER WORKS

Boilers - Tanks - Steel Plate Work

Main Office and Works—COATESVILLE, PA.

Philadelphia 11 S. 15th St.	New York 30 Church St.	Boston 141 Milk St.
Pittsburgh Union Trust Bldg.	Baltimore Lexington Bldg.	Newark 60 Park Place

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 5, 1928.

While trading in the local paper market was only moderately active during the past week, a continual expansion of business is confidently looked for during the balance of the year, now that Labor Day has passed. Inquiries on account of future requirements are being received in satisfactory volume and the industry is generally optimistic over the outlook. Prices are holding up very well and there is little talk of concessions.

News print production is running at about 75 per cent of capacity in the North American mills. Although many publishers are engaged in replenishing their stocks, supplies on hand are apparently large enough to take care of the current demand. While quotations for immediate delivery are unchanged, concessions are being made on contracts signed for the forthcoming year.

Steadiness prevails in the paper board market. Production is being maintained in good volume and is being keyed by the demand. Prices remain unchanged. The fine paper market is exhibiting a strong undertone with quotations holding to schedule. Signs of improvement have been noticed in the coarse paper market and wrapping paper is in excellent request.

Mechanical Pulp

Most of the business transacted in the ground wood market of late has been for immediate requirements. Demand for both domestic and imported mechanical pulp is mostly routine but some improvement is anticipated now that the holidays are practically over. Prices are generally unaltered although there have been reports of shading on extra large orders.

Chemical Pulp

The chemical pulp market was fairly active during the week and it is reported that a satisfactory volume of orders have been booked recently for the forthcoming year. Bleached sulphite still continues the bright particular feature of the chemical pulp market and offerings of both imported and domestic grades are decidedly scarce. Quotations are practically unchanged.

Old Rope and Bagging

Demand from the paper mills for foreign and domestic old rope is fairly persistent. Prices of the different grades are steady and unchanged. The bagging market was rather quiet during the past week, due to the holidays, but, judging from the number of inquiries around, some improvement should develop before long. Prices are generally holding to former levels.

Rags

Inquiries for foreign and domestic rags are becoming more numerous and an active market is anticipated for the closing months of the year. Roofing grades continue to move in excellent volume. Cotton cuttings are in fairly satisfactory request. Prices of the varous grades are practically unchanged and there are not many reports of shading around.

Waste Paper

The paper stock market is exhibiting a strong undertone. The grades used by the board manufacturers are particularly active. Offerings are rather limited and consequently prices are steady to firm. Manila's and news are particularly strong and recent advances are being maintained without difficulty. Practically all grades of paper are showing some improvement.

Twine

Although the position of the twine market is unchanged, it is generally believed that purchasing will expand materially during the last quarter of the year, with the usual increased movement of wrapping paper. Prices of the various grades are generally holding to schedule and should rule steady to firm during the balance of the year.

Boxboard Production for July

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 4, 1928.—July production of box board, based on reports to the Department of Commerce by 93 firms operating 120 plants (reports for earlier months including four concerns now out of business) was 73.2 per cent of capacity, as compared with 79.9 per cent in June and 69.2 per cent in July, 1927. In the following table the capacity data vary according to the number of working days in each month:

Year and Month	Operation			Production			New Orders	Unfilled Orders (end of month)
	Inch hours		Per cent of Capacity	Short Tons		Per cent of Capacity	Short Tons	
	Capacity	Operated		Capacity	Output			
1927								
Jan.	10,474,300	6,998,505	66.8	275,100	173,629	63.1	194,285	105,669
Feb.	10,055,328	7,583,477	75.4	264,096	189,273	71.7	183,861	102,005
Mar.	11,312,244	8,627,946	76.3	297,108	219,824	74.0	230,065	114,369
April	10,893,272	7,771,040	71.3	286,104	205,589	71.9	197,435	101,861
May	10,474,300	7,836,315	74.8	275,100	200,216	72.8	194,122	93,248
June	10,893,272	8,277,054	76.0	286,104	214,704	75.0	213,735	94,847
July	10,474,300	7,443,012	71.1	275,100	190,406	69.2	213,649	109,616
Total (7 mos.)	74,577,016	54,537,349	73.2	1,958,712	1,393,641	71.2	1,427,152	.....
1928								
Jan.	10,372,900	7,833,458	75.5	273,125	203,882	74.6	204,128	80,417
Feb.	10,372,900	8,136,737	78.4	273,125	211,862	77.6	215,333	85,862
Mar.	11,312,244	8,843,542	78.2	297,108	227,344	76.5	244,871	93,380
April	10,474,300	8,311,710	79.4	275,100	221,079	80.4	211,304	84,513
May	10,893,272	8,733,965	80.2	286,104	242,394	84.7	224,366	73,157
June	10,893,272	8,199,515	75.3	286,104	228,646	79.9	228,252	77,782
July	10,474,300	8,000,170	76.4	275,100	201,489	73.2	210,547	79,492
Total (7 mos.)	74,793,188	58,058,097	77.6	1,965,766	1,536,696	78.2	1,538,801	.....

Year and Month	Shipments of boxboard	Stocks of boxboard, end of month	Consumption of waste paper		Per cent of Capacity	Stocks of waste paper, end of month	
			Capacity	Consumed		At plants	In transit and unshipped purchases
	Short Tons		Short Tons			Short Tons	
1927							
Jan.	175,528	53,562	256,450	163,337	63.7	163,023	38,062
Feb.	189,032	53,327	246,192	182,322	74.1	158,222	40,602
Mar.	217,876	54,566	276,966	209,730	75.7	155,513	43,789
April	209,944	50,211	266,708	189,942	71.2	147,938	46,314
May	201,788	48,906	256,450	193,077	75.3	149,438	59,289
June	211,828	52,452	266,708	207,187	77.7	151,671	43,807
July	194,283	49,307	256,450	182,283	71.7	150,709	51,255
Total (7 mos.)	1,400,281	.....	1,825,924	1,327,878	72.7	.....	.....
1928							
Jan.	196,984	49,032	255,225	189,744	74.3	153,747	62,181
Feb.	209,477	50,350	255,225	193,966	76.0	140,104	60,038
Mar.	237,621	40,439	276,966	209,649	75.7	139,255	47,322
April	220,315	40,319	256,450	211,898	82.6	132,621	47,551
May	235,794	49,107	266,708	220,750	82.8	127,217	46,375
June	223,901	53,560	266,708	204,468	76.7	130,484	43,480
July	204,212	49,834	256,450	191,152	74.5	132,311	62,056
Total (7 mos.)	1,528,304	.....	1,833,732	1,421,627	77.5	.....	.....

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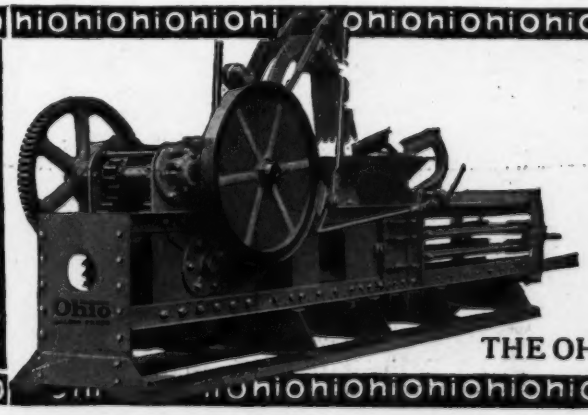

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THE OHIO CULTIVATOR CO., Bellevue, Ohio

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 5, 1928.

BLANC FIXE.—Trading in the blanc fixe market was fairly active during the past week. Prices are generally holding to schedule without difficulty. The pulp is still quoted at $40 per ton, in bulk, and the powder is selling at from 3½ to 3¾ cents a pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is rather quiet at present. Offerings are sufficient to take care of current needs. Prices remain unaltered. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works, according to quantity and grade.

CASEIN.—Steadiness prevails in the casein market. Prices are steady and unchanged and shading is infrequent. Domestic casein is quoted at from 16¼ cents to 17 cents a pound. Imported casein is still offered at from 16¾ cents to 17 cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is persistent. Contract shipments are going forward in satisfactory volume. Prices remain unchanged. Solid caustic soda is quoted at from $2.90 to $2.95 per 100 pounds. The flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Some improvement was noticed in the china clay market. Quotations are holding to schedule without difficulty. Imported china clay is quoted at from $15 to $25 a ton, ship side. Domestic paper making clay is selling at from $8 to $9 a ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—Conditions in the chlorine market are satisfactory. Supplies are moving into consumption at a normal pace for the season. Chlorine is quoted at 3½ cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¾ cents to 4 cents a pound.

ROSIN.—Prices declined sharply in the rosin market. At the naval stores, the various grades of gum rosin used in the paper mills are now quoted at from $9.15 to $9.20 per 280 pounds, ex dock, in barrels. Wood rosin is still selling at from $7.50 to $8.30 per 280 pounds, at southern shipping points.

SALT CAKE.—Offerings of salf cake are rather limited at present and the market is exhibiting a strong undertone. Quotations are steady to firm. Salt cake is selling at from $15 to $17 a ton, in bulk, at works. Chrome salt cake is still offered at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Contract withdrawals of soda ash are going forward in good volume. Inquiries for future business are fairly numerous. Prices remain unchanged. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—No further changes have been reported in the starch market. Demand for this product is mostly seasonal. Shipments against contract are going forward in a normal manner. Special paper making starch is still quoted at $4.07 per 100 pounds, in bags, and at $4.24 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—The sulphate of alumina market is in a sound position. Prices are holding to schedule, in most instances. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 per 100 pounds. The iron free is selling at from $10 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Most of the business transacted in the sulphur market during the past week was along routine lines. Contract shipments are going forward regularly. Prices are unchanged. Sulphur is quoted at from $18 to $19 a ton, in bulk, at mine, on contract orders. The spot quotation is $20 per ton.

TALC.—Business in the talc market is fairly good. Prices are holding to previously quoted levels, and there is little talk of concessions around. Domestic talc is quoted at from $16 to $18 a ton, in bulk, at eastern mines. Imported talc is selling at from $18 to $20 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@	38.00
Bonds	9.00	@	45.00
Writings—			
Extra Superfine	14.00	@	32.00
Superfine	14.00	@	32.00
Tub sized	10.00	@	15.00
Engine sized	8.00	@	11.00
News—			
Rolls, contract	3.25	@	—
Rolls, transient	3.25	@	3.50
Sheets	3.65	@	3.85
Side Runs	3.00	@	3.75
Book, Cased—			
S. & S. C.	6.35	@	7.75
M. F.	6.25	@	7.75
Coated and Enamel	8.00	@	15.00
Lithograph	8.00	@	15.00
Tissues—Per Ream—			
White No. 1	.75	@	1.00
Anti-Tarnish	1.10	@	1.90
Colored	1.00	@	2.00
White No. 2	.75	@	.85
Kraft	.90	@	1.00
Manila	.75	@	.85
Kraft—			
No. 1 Domestic	6.25	@	6.50
No. 2 Domestic	4.25	@	4.50
Southern	4.00	@	4.25
Imported	6.50	@	7.00
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.75	@	5.25
No. 2 Wood	4.00	@	4.50
Butchers	3.75	@	4.25
Fibre Papers—			
No. 1 Fibre	5.00	@	5.50
No. 2 Fibre	4.75	@	5.25
Common Bogus	2.75	@	3.00
Screenings	3.00	@	3.25
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs.	13.00	@	16.00
Bleached, basis 20 lbs.	15.00	@	16.00

(Delivered New York)

Boards—per ton—			
News	50.00	@	52.50
Straw	52.50	@	55.00
Chip	47.50	@	50.00
Binders' Boards	65.00	@	67.50
Sgl. Mla. Ll. Chip	51.00	@	53.50
Wood Pulp	80.00	@	85.00
Container	67.50	@	72.50
85 test Jute Liner	57.50	@	60.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—			
Moist	30.00	@	31.25
Dry	32.00	@	34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@	29.00
Screenings	15.00	@	20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	3.65	@	4.25
Easy Bleaching	2.70	@	2.90
No. 1 strong unbleached	2.60	@	2.70
Mitscherlich unbleached	2.65	@	3.25
No. 2 strong unbleached	2.50	@	2.60
No. 1 Kraft	2.60	@	2.75
No. 2 Kraft	2.40	@	2.50
Sulphate—			
Bleached	3.75	@	3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—			
Bleached	3.40	@	4.75
Easy Bleaching Sulphite	2.60	@	2.75
News Sulphite	2.40	@	2.65
Mitscherlich	3.00	@	3.70
Kraft (Domestic)	2.70	@	3.30
Soda Bleached	3.15	@	3.50
Sulphate Screenings—			
Coarse	.75	@	.85
Refined	1.50	@	1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	11.25	@	11.75
New White, No. 2	8.00	@	8.50
Silesias No. 1	7.25	@	7.75
New Unbleached	10.50	@	11.00
Washables	4.25	@	4.75
Fancy	5.50	@	6.00
Blue Overall	6.75	@	7.25
New Blue Prints	5.25	@	5.50
New Soft Blacks	5.25	@	5.75
Mixed Khaki Cuttings	4.75	@	5.25
Pink Corset Cuttings	8.00	@	8.50
O. D. Khaki Cuttings	5.25	@	5.75
Men's Corduroy	3.75	@	4.25
New Mixed Blacks	3.50	@	3.75

Old Rags

White, No. 1—			
Repacked	5.50	@	6.00
Miscellaneous	4.50	@	5.00
White, No. 2—			
Repacked	3.00	@	3.50
Miscellaneous	2.50	@	2.75
St. Soiled, White	2.00	@	2.15
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	2.00
Black Stockings	3.25	@	3.75
Roofing Rags—			
Cloth Strippings	1.70	@	1.80
No. 1	1.70	@	1.80
No. 2	1.55	@	1.65
No. 3	1.30	@	1.40
No. 4	1.25	@	1.35
No. 5A	.95	@	1.05

Foreign Rags

New Dark Cuttings	2.50	@	3.00
New Mixed Cuttings	2.75	@	3.25
New Light Silesias	7.00	@	7.50
Light Flannelettes	7.50	@	8.00
Unbleached Cottons	10.00	@	11.00
New White Cuttings	10.50	@	11.50
New Light Oxfords	7.00	@	7.50
New Light Prints	5.50	@	6.50
No. 1 White Linens	7.25	@	8.00
No. 2 White Linens	5.50	@	6.25
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	3.00	@	3.50
Old Extra Light Prints	2.75	@	3.25
Ord. Light Prints	2.25	@	2.50
Med. Light Prints	1.90	@	2.10
Dutch Blue Cottons	2.25	@	2.50
German Blue Linens	2.50	@	2.75
German Blue Cottons	2.00	@	2.25
Checks and Blues	1.75	@	1.90
Lindsay Garments	1.90	@	2.00
Dark Cottons	1.65	@	1.75
Old Shopperies	1.55	@	1.65
New Shopperies	1.50	@	1.60
French Blues	2.10	@	2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.60	@	1.70
Domestic	1.70	@	1.75
Wool Tares, light	1.60	@	1.65
Wool Tares, heavy	1.60	@	1.65
Bright Bagging	1.60	@	1.65
Small Mixed Rope	1.25	@	1.40
Manila Rope—			
Foreign	3.25	@	3.50
Domestic	3.25	@	4.00
New Burlap Cut	2.75	@	3.00
Hessian Jute Threads—			
Foreign	3.50	@	4.00
Domestic	3 25	@	3.50

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard, white, No. 1	3.25	@	3.50
Hard, white, No. 2	2.50	@	2.65
Soft, White, No. 1	2.25	@	2.50
White envelope cuttings	3.25	@	3.50
Flat Stock—			
Stitchless	1.60	@	1.70
Overissue Mag.	1.60	@	1.70
Solid Flat Book	1.45	@	1.55
Crumpled No. 1	1.10	@	1.20
Solid Book Ledger	2.00	@	2.10
Ledger Stock	1.60	@	1.75
Manilas—			
New B. B. Chips	.65	@	.75
New Env. Cut	2.40	@	2.60
New Cuttings	1.60	@	1.85
Extra No. 1 old	1.25	@	1.35
Print	.80	@	.85
Container	.70	@	.75
Bogus Wrapper	.75	@	.85
Old Kraft Machine Compressed bales	1.80	@	1.90
News—			
No. 1 White News	1.65	@	1.75
Strictly Overissue	.85	@	.95
Strictly Folded	.65	@	.75
No. 1 Mixed Paper	.60	@	.65
Common Paper	.30	@	.35

Clay

300 tons daily

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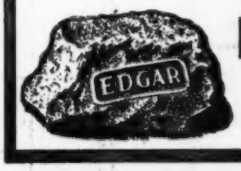

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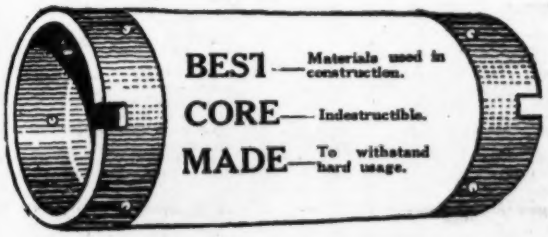

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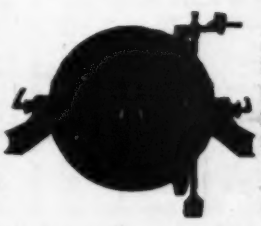

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THE BIGGS BOILER WORKS CO.
AKRON, 20, OHIO

Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¾
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04½	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton— (Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined— (Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	2.90	@	3.00
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.25	@	1.35
Blanks	1.70	@	1.80
Krafts	1.90	@	2.00
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (overissue)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks— (F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.06
Manila No. 2	.04	@	.04½
No. 2 Kraft	.04½	@	.05
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	50.00	@	75.00
News Board	47.50	@	—
Chip Board	42.50	@	45.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	80.00	@	90.00
No. 2, per ton	75.00	@	80.00
Carload lots	65.00	@	75.00
Tarred Felts—			
Regular	53.00	@	55.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Sil. in. soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.03½	@	.04
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	—	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03½
New Canvas	.08	@	.09½
New Black Mixed	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.40	@	1.50
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	—	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.40	@	2.50
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.50	@	1.60
No. 1 Books, heavy	1.50	@	1.60
No. 2 Books, light	1.25	@	1.40
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.80	@	.90
Old Kraft	2.25	@	2.50
Common Paper	.50	@	.55
No. 1 Mixed Paper	.55	@	.60
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.75	@	.80
Old Newspaper	.50	@	.60

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	02¼	@	02½
Miscellaneous	.01¼	@	.02
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.80	@	2.00
Black Stockings	3.75	@	4.00
Roonng Stock—			
No. 1	1.65	@	1.75
No. 2	1.40	@	1.50
No. 3	1.25	@	—
No. 4	1.25	@	—
No. 5A	.85	@	.90
B	.80	@	.85
C	.70	@	.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.04	@	.04¾
Common Bogus	.02	@	.02¾
Delivered New England points			
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s			54.50 @ 55.00
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp Lined Board			52.50 @ 57.50
Single White, Patent Coated Newsboard Bender			70.00 @ 80.00
Wood Pulp Board			80.00 @ 85.00
Binder Boards			70.00 @ 75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots			65.00 @ —

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.60	@	—
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.20	@	1.25
White Blank News	1.60	@	1.65
Old Kraft	2.00	@	2.10
Print Manila	.80	@	.90
No. 1 Mixed Paper	.65	@	.70
Overissue News	.70	@	.80
Old Newspapers	.65	@	.70
Box Board	—	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	3.50	@	—
Domestic	3.25	@	3.50
Mixed Strings	.90	@	1.00
Scrap Burlaps	1.45	@	1.50
Scrap Sisal	1.25	@	1.50
Scrap Sisal for shredding	1.50	@	1.65
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	2.00	@	2.25

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09	@	.10
Silesias, No. 1	.06	@	.06½
New Unbleached	.09½	@	.10
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06	@	.06½
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
Corduroy	.03	@	.04
New Canvas	.08	@	.08½

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.75	@	1.85
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.70	@	1.75
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.00	@	5.50
New Checks & Blues	4.50	@	4.65
Old Fustians	1.90	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10½	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

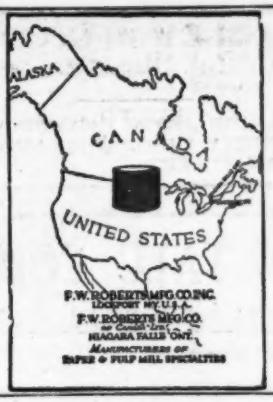
Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk, News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	05½	@	—

BURRS



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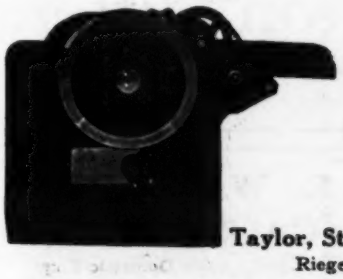

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Pressure Pipe That Never Bursts. Built in sizes 1 inch to 48 inches.

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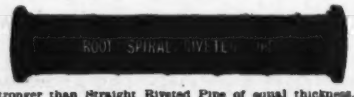

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See inside back cover September 27

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"Your paper is made in your Beaters"
See page 37 last week's issue
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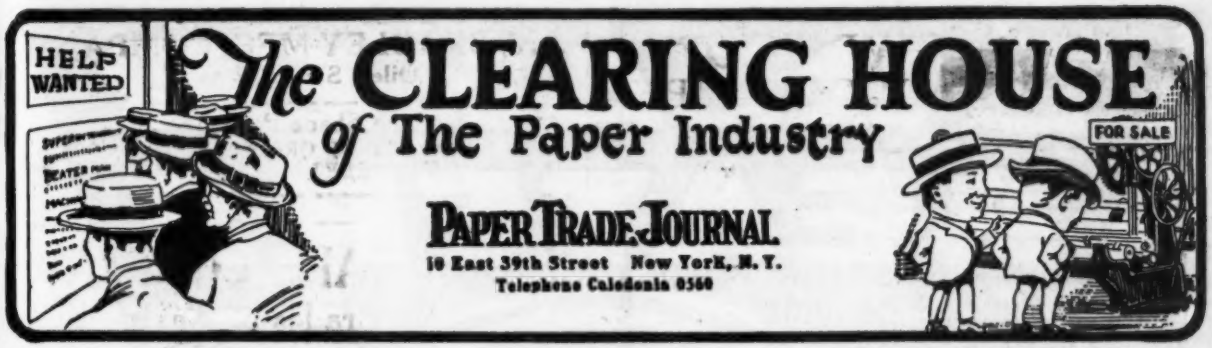
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"HELP WANTED" ADVERTISEMENTS—4c a word, double rates for heavy face type. Minimum charge $1.00.

CLASSIFIED ADVERTISEMENTS—4c a word, double rate for heavy face type. Minimum charge $1.00.
All classified, "Help Wanted" and "Situation Wanted" advertisements are payable in advance.

HELP WANTED

WANTED—Salesman for general western territory, for fine line and flat papers. Mill connection. Address, Box 28-613, care Paper Trade Journal. S-6

WANTED—One experienced Mill Rulerman. Must be steady and reliable. Address, Box 28-614, care Paper Trade Journal. S-20

PULP SALESMAN WANTED—Eastern sales experience preferred. Address, Box 28-615, care Paper Trade Journal. S-6

WANTED—Sales Director for a large mill in the Central West making high grade specialties. The products of this mill are of the highest standard and well known throughout world markets. A young man of ability with a creative mind, good personality and one who can find pleasure in hard work is needed for a permanent position. Give detailed past experience, qualifications and references in first letter. Address, Box 28-616, care Paper Trade Journal. S-13

GLUE SALESMAN—A Middle West glue manufacturer desires the services of an experienced glue salesman, who is familiar with the consuming trade of the Middle West. Applications and inquiries confidential. Address, Box 28-575, care Paper Trade Journal. t.f.

YOUNG MAN with both executive and sales ability to learn business of old established concern manufacturing sacks for flour, feed, fuel, lime, plaster, etc. Opportunity for right man to become interested in business. Experience and salary desired at start absolutely necessary in first letter. Address, Box 28-587, care Paper Trade Journal. S-6

WANTED—Two good back tenders. Must be steady sober men able to oversee Langston winder on light weight boxboard. Address: Shenandoah Boxboard Corporation, Winchester, Virginia. S-6

$3,000.00-$30.000.00 men find our Service effective in making connections. Individual. Confidential. Personally planned by JACOB PENN. All mill owners know him, believe in him. Not agency. Jacob Penn, Incorporated, 9 Park Place, New York. tf

WANTED
Experienced Boss Machine Tender

Capable of handling five machines.
Thirty to forty years of age.

Do not apply unless capable of handling speeds up to 700 feet.

Advise salary expected.

Address, Box 28-572, care Paper Trade Journal S-13

HELP WANTED

TWO BOSS MACHINE TENDERS for tour work Four-machine mill; cylinder machines, good pay and living conditions. Do not apply unless you have been boss machine tender and successfully able to handle crew and get quality production. Men who have had experience with asbestos preferred but not necessary. Apply by writing only to Box 28-596, care Paper Trade Journal. S-6

IF YOU are open to overtures for new connection, and qualified for a salary between $2.500 and $25.000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standing and reputation, through which preliminaries are negotiated confidentially for positions of the calibre indicated. The procedure is individualized to each client's personal requirements; your identity covered and present position protected. Established seventeen years. Send only name and address for details. R. W. Bixby, Inc., 117 Downtown Building, Buffalo, New York. tf

SITUATIONS WANTED

YOUNG MAN with diversified office training desires mill connection. Experienced in handling mill supply situation, traffic, claims, etc. Also machine schedule layout on coarse papers and board. Highest references character and ability. Address, Box 28-584, care Paper Trade Journal. S-6

SALES MANAGER OR SALESMAN—For paper mill making coarse papers. Have following among paper jobbers. New England, Atlantic and Southern States. Salary or commission basis. Location or traveling optional, or will establish New York City selling office. Address, Box 28-252, care Paper Trade Journal. S-6

SUPERINTENDENT wants to make a change. Up on most all grades of paper—Kraft, news, manilas, water and steam finish, and dry fibres. Address, Box 28-607, care Paper Trade Jaurnal. t. f.

CYLINDER MACHINE TENDER—Good on any grade of stock, will go to any part of country. Address, Box 28-627, care Paper Trade Journal. O-4

SECRETARY-STENOGRAPHER: (Female) 11 years experience paper mill work; thoroughly acquainted office routine; good knowledge manufacture pulp and paper; seeks permanent position. Excellent references. Address, Box 28-432, care Paper Trade Journal. S-6

MACHINE TENDER—Eight years running most all grades of lined and chip board. Young, married, willing to work. References. Address, Box 28-601, care Paper Trade Journal. S-13

CHIEF ENGINEER OR MASTER MECHANIC—Have had 25 years experience on board and Fourdrinier machines; also pulp and ground wood mills. Can organize help and get results. Can build, operate or modernize your present plant. Address, Box 28-558, care Paper Trade Journal. S-6

SITUATIONS WANTED

WANTED: A Hard Job With a Big Future

Successful young man is willing to terminate a most congenial relationship only because of its limited future. Six years sales manager in present position, four years advertising manager of prominent clothing manufacturer, eleven years department and branch manager with large maker of paper products. Fertile in ideas and resourceful, has had a wealth of experience on both sides of the desk. Capable of initiating and carrying out constructive sales policies. Will not waste your time unless he is convinced that his talents and experience fit him to increase your business along constructive lines. N. Y. City preferred. Character of associates and scope of opportunity more important than size of concern. Salary and profit-sharing basis yielding $10,000 or over. Age thirty-six, Gentile, sound in mind and body, highest references as to personal integrity and ability.

Address, Box 28-626, care Paper Trade Journal. S-6

BOSS BEATERMAN AND COLORMAN—Thoroughly experienced practical man on all grades of papers and boards, desires position in a two or three machine mill. Good specialty man, reliable and steady. Used to rapid changing. Address, Box 28-606, care Paper Trade Journal. S-13

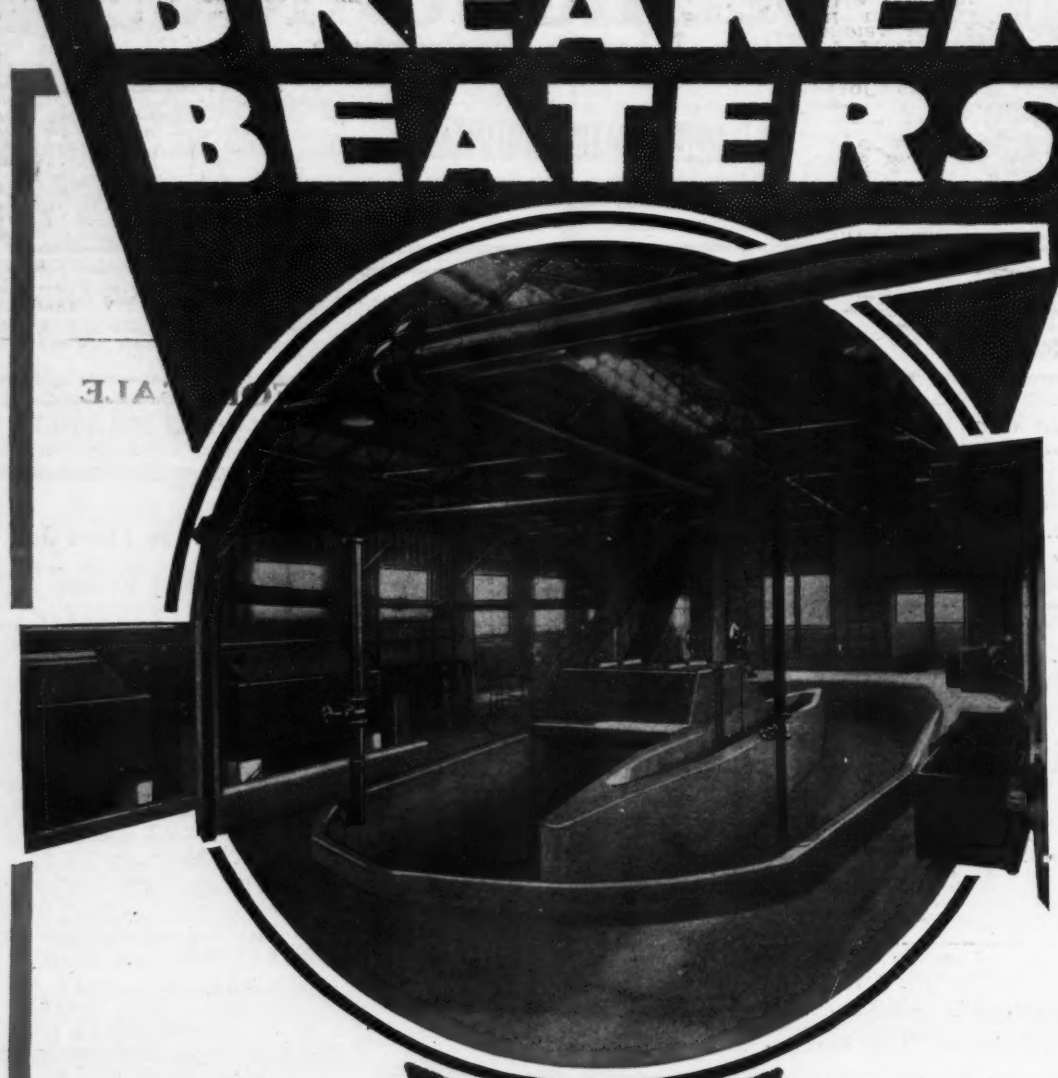
NIGHT SUPERINTENDENT—32 years of age; 13 years experience on tissues, bond, Kraft, board and wrapping. Best of references. Address, Box 28-619, care Paper Trade Journal. S-20

BACKTENDER desires position. 26 years of age, married, experienced on book, bond, catalog and Kraft. A-1 reference. Address, Box 28-620, care Paper Trade Journal. S-6

ASSISTANT SULPHITE SUPERINTENDENT, with eight years experience in sulphite work, desires similar position, or would accept cooking job with chance for advancement. Can produce best quality sulphite. Central or Western U. S. location. References. Address, Box 28-179, care Paper Trade Journal. S-6

SUPERINTENDENT OR ASSISTANT—25 years' experience in a board mill making jute, test, news and container board. Good on production and maintenance. Can give best of references. Address, Box 28-581, care Paper Trade Journal. S-27

BREAKER BEATERS



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Draw your own conclusion after we tell you that the Shartle Breaker has replaced one or more breaker installations of all other well known makes, but that no competing make has ever permanently replaced a Shartle.

Will easily handle frozen laps. Will do away with a shredder. Will reduce your pulp to a satisfactory consistency. AND PAY FOR ITSELF OUT OF THE SAVINGS ON LABOR IT WILL BRING ABOUT.

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SHARTLE BROTHERS

DIVISION OF THE BLACK-CLAWSON COMPANY

Paper Mill Machinery

SHARTLE BROS. MACHINE CO., MIDDLETOWN, OHIO

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SUPERINTENDENT—Long experience on high grade papers. Bonds, ledgers, book, colored specialties. Good executive. Large following in the trade. Address, Box 28-523, care Paper Trade Journal. S-13

SUPERINTENDENT OR PLANT MANAGER wants position. Can report on short notice. Have had twenty-five years experience on cylinder and Fourdrinier machines, making all grades of paper. Have worked for some of the largest concerns in United States and Canada. Capable of taking full charge and guaranteeing results. Can furnish best references. Address, Box 28-557, care Paper Trade Journal. S-6

BEATER ENGINEER—Sixteen years experience on high grade rag bonds, ledgers, book, colored specialties, manifolds, tissue, and bristol boards. Age 45 years. Fine references. Address, Box 28-582, care Paper Trade Journal. O-11

MASTER MECHANIC desires position. Experienced on mechanical upkeep and building and erecting paper mill machinery. Best references. Address, Box 28-522, care Paper Trade Journal. S-27

SUPERINTENDENT, now employed, would consider change. Experienced on all grades box board and test liners. Address, Box 28-555, care Paper Trade Journal. S-6

FINE WRITING PAPER MILL CHEMIST—College graduate. Rag bonds, ledgers and specialties. Would like a position with opportunity for advancement. Address, Box 28-494, care Paper Trade Journal. tf.

SUPERINTENDENT with 20 years experience on all grades of combination board and an expert on container wishes to make a change. Can furnish very best of references. Address, Box 29, 593, care Paper Trade Journal. S-6

CHEMIST (Scandinavian), with degree from Polytechnical Highschool, wants to work in paper mill or laboratory. Address, Box 28-617, care Paper Trade Journal. S-6; S-20

SALESMAN desires connection for paper mill supplies. Best of references. Address, Box 28-618, care Paper Trade Journal. S-6

WANTED

WANTED—2 W. & P. Pulpers, 2 Filter Presses and 1 Rogers Wet Machine. Address, Box 27-285, care Paper Trade Journal. tf

WANTED—Experimental Stack Calenders, more than 8" face, preferably steam heat. Address, Box 28-577, care Paper Trade Journal. tf.

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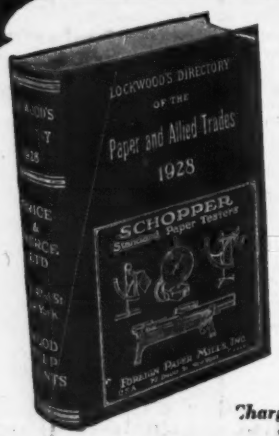

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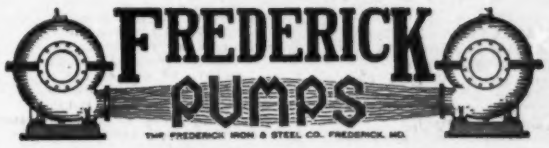

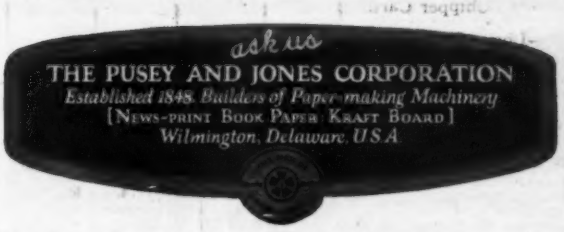
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The first Dictionary of Paper Terms ever compiled in this form and the only work of its kind available.

1460 PAPER TERMS
Drawn up by the Sectional Committee on Definitions

THIS BOOK should be in the hands of every paper manufacturer, every paper merchant, exporter, importer, every converter and every buyer of paper, as well as every producer of materials used in paper manufacture.

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In this list of definitions has been included, as far as possible—
(a) The basic paper terms used in the classification (identified by the classification numbers).
(b) The various commercial papers, the names of which have, in most instances, grown out of special uses to which the papers have been put.
(c) Various converted articles made from paper.
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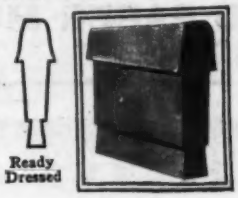

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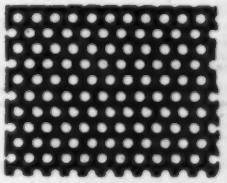

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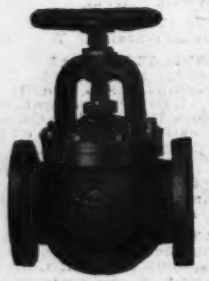

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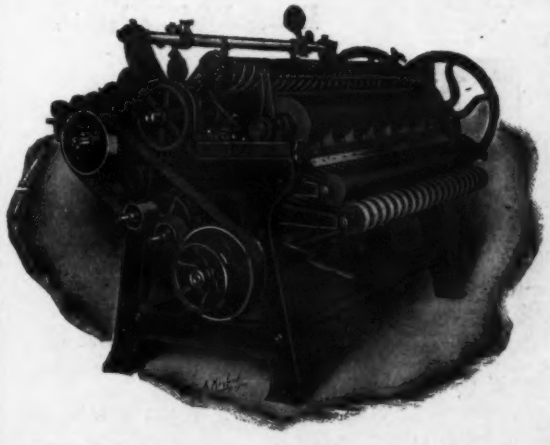

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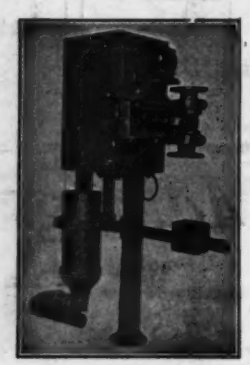

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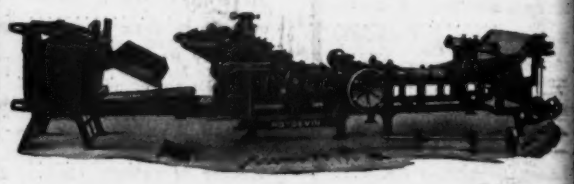

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 5, 1928.

MANC FIXE.—Trading in the blanc fixe market was fairly active during the past week. Prices are generally holding to schedule without difficulty. The pulp is still quoted at $40 per ton, in bulk, and the powder is selling at from 3½ to 3¾ cents a pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is rather quiet at present. Offerings are sufficient to take care of current needs. Prices remain unaltered. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works, according to quantity and grade.

CASEIN.—Steadiness prevails in the casein market. Prices are steady and unchanged and shading is infrequent. Domestic casein is quoted at from 16¼ cents to 17 cents a pound. Imported casein is still offered at from 16¾ cents to 17 cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is persistent. Contract shipments are going forward in satisfactory volume. Prices remain unchanged. Solid caustic soda is quoted at from $2.90 to $2.95 per 100 pounds. The flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Some improvement was noticed in the china clay market. Quotations are holding to schedule without difficulty. Imported china clay is quoted at from $15 to $25 a ton, ship side. Domestic paper making clay is selling at from $8 to $9 a ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—Conditions in the chlorine market are satisfactory. Supplies are moving into consumption at a normal pace for the season. Chlorine is quoted at 3½ cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¼ cents to 4 cents a pound.

ROSIN.—Prices declined sharply in the rosin market. At the naval stores, the various grades of gum rosin used in the paper mills are now quoted at from $9.15 to $9.20 per 280 pounds, ex dock, in barrels. Wood rosin is still selling at from $7.50 to $8.30 per 280 pounds, at southern shipping points.

SALT CAKE.—Offerings of salt cake are rather limited at present and the market is exhibiting a strong undertone. Quotations are steady to firm. Salt cake is selling at from $15 to $17 a ton, in bulk, at works. Chrome salt cake is still offered at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Contract withdrawals of soda ash are going forward in good volume. Inquiries for future business are fairly numerous. Prices remain unchanged. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—No further changes have been reported in the starch market. Demand for this product is mostly seasonal. Shipments against contract are going forward in a normal manner. Special paper making starch is still quoted at $4.07 per 100 pounds, in bags, and at $4.24 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—The sulphate of alumina market is in a sound position. Prices are holding to schedule, in most instances. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 per 100 pounds. The iron free is selling at from $10 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Most of the business transacted in the sulphur market during the past week was along routine lines. Contract shipments are going forward regularly. Prices are unchanged. Sulphur is quoted at from $18 to $19 a ton, in bulk, at mine, on contract orders. The spot quotation is $20 per ton.

TALC.—Business in the talc market is fairly good. Prices are holding to previously quoted levels, and there is little talk of concessions around. Domestic talc is quoted at from $16 to $18 a ton, in bulk, at eastern mines. Imported talc is selling at from $18 to $20 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@35.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	3.35	@ —
Rolls, transient	3.75	@ 3.50
Sheets	3.65	@ 3.60
Side Runs	3.00	@ 3.75
Book, Coated—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.25	@ 4.50
Southern	4.00	@ 4.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	50.00	@52.50
Straw	52.50	@55.00
Chip	47.50	@50.00
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip	51.00	@53.50
Wood Pulp	80.00	@85.00
Container	67.50	@72.50
85 test Jute Liner	57.50	@60.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	30.00	@31.25
Dry	32.00	@34.00
(F. o. b. Mill)		
No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.25
Easy Bleaching	2.70	@ 2.90
No. 1 strong unbleached	2.60	@ 2.70
Mitscherlich unbleached	2.65	@ 3.25
No. 2 strong unbleached	2.50	@ 2.60
No. 1 Kraft	2.60	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.00	@ 3.70
Kraft (Domestic)	2.70	@ 3.30
Soda Bleached	3.15	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.25	@11.75
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 7.00
Linen Overalls	6.75	@ 7.00
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Unsorted	3.50	@ 4.00
Miscellaneous	4.50	@ 4.90
White, No. 2—		
Unsorted	3.00	@ 3.50
Miscellaneous	3.50	@ 3.75
No. 2 Soiled, White	2.00	@ 2.10
Thirds and Blues—		
Unsorted	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 1.90
Lindsay Garments	1.90	@ 2.00
Dark Cottons	1.65	@ 1.75
Old Shopperies	1.55	@ 1.65
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.25	@ 3.50
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.50	@ 2.65
Soft, White, No. 1	2.25	@ 2.50
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.60	@ 1.70
Overissue Mag.	1.60	@ 1.70
Solid Flat Book	1.45	@ 1.55
Crumpled No. 1	1.10	@ 1.20
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.60	@ 1.75
Manilas—		
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.80	@ .85
Container	.70	@ .75
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.80	@ 1.90
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	.85	@ .95
Strictly Folded	.65	@ .75
No. 1 Mixed Paper	.60	@ .65
Common Paper	.30	@ .35

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ESTABLISHED 1872

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FIFTY-SEVENTH YEAR

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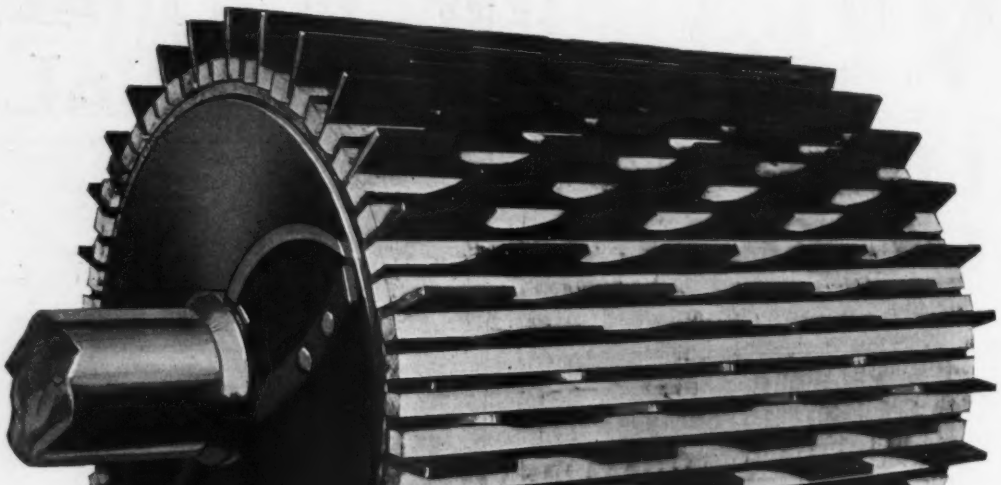

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